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CLINICAL LECTURES, 1843.  
*James Ambrose*

BY

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PROFESSOR OF THE INSTITUTES OF MEDICINE IN THE SCHOOL OF PHYSIC, TRINITY  
COLLEGE, DUBLIN, ETC., ETC., ETC.

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SECOND AMERICAN EDITION,

WITH

NOTES AND A SERIES OF LECTURES,

BY

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PHYSICIAN TO THE PHILADELPHIA HOSPITAL, BLOCKLEY,  
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## PREFACE.

BY THE AMERICAN EDITOR.

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THE Clinical Lectures of Dr. Graves, which were originally published in the weekly periodicals of London, were first printed in their present form in the American Medical Library. They have excited so much interest in this country, and contain so much practical and interesting matter, that a new edition was thought advisable.

The publishers of the present Edition thought that a few notes and some additional lectures would not lessen the value of the work, and requested the American Editor to republish a few of the Clinical Lectures given by him at the PHILADELPHIA MEDICAL INSTITUTE, and at the PHILADELPHIA HOSPITAL, as a part of the Clinical Course of the UNIVERSITY OF PENNSYLVANIA. The circumstances which attended the publication of this edition restricted the number of these Lectures, and increased the disadvantages under which they appear, as compared, and, it is feared, contrasted with the LECTURES OF DR. GRAVES. An apology seems necessary for the style as well as the substance of the Lectures; with a few exceptions they were not written by the author, but were noted as they were delivered, and afterwards corrected, so that they are *bona fide* Clinical Lectures. The Lectures which were given at the PHILADELPHIA HOSPITAL contain some expressions which would not be readily understood without a knowledge of the mode of conducting the Clinical Course. The clinical wards are contiguous to the lecture-room, and the patients are carried into it on their beds; the remarks upon their case are made in their presence, or imme-

## PREFACE.

diately after they are removed, if the disease be of a nature to render the ~~prognosis~~ doubtful, or if any other circumstances make it improper to speak before the patient. The class is too numerous to accompany the physician in his visits.

The Lectures which were given at the Philadelphia Institute were conducted much in the usual way; the pupils followed the visit, and noted the symptoms and treatment; the clinical comments and *resumé* were made in another place.

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# CLINICAL LECTURES.

## FIRST SERIES.

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### LECTURE I.

#### GENERAL OBSERVATIONS.

GENTLEMEN :— As it is usual, at the commencement of a course of clinical instruction, to devote the first lecture to a consideration of some general topics connected with the line of studies most proper to be pursued by those who wish to attain eminence ; I have, in compliance with this custom, thought it right to lay before you some observations on the proper mode of studying physiology and morbid anatomy, with a view of showing how best to derive advantages from these accessory but necessary sciences, — sciences which, according to the manner in which they have been cultivated, have, at different periods, retarded or advanced that most important of all branches of professional knowledge, practical medicine. It is quite evident, that a knowledge of the functions and structure of the body in health is essential to him who undertakes the treatment of disease, and hence physiology has always occupied the attention of physicians. Physiology, however, may be studied in very different ways, and with very different objects ; and, until lately, all those who were engaged in the cultivation of this fascinating science, not contented with observing the state of the different parts and tissues during health, the nature and quality of the secretions, the mechanism and operation of the different organs, sought to ascend from a knowledge of effects to an investigation of causes, and, after they had classified the more obvious phenomena of living bodies, endeavoured to ascertain, if not the very principle of life, at least those motions and causes of motion which result immediately from the action of the living principle. Having thus, as they conceived, obtained a more accurate knowledge of the conditions of health, they proceeded to form general explanations of the causes of disease, and frame general rules for their removal. This method, apparently so philosophical, and possessing so many

attractions from the generality and simplicity of its application, has, more than any other circumstance, contributed to retard the progress of medicine. Gentlemen, this is not only an ancient, it is also a modern evil. We live among systems. It is true, that the practice, founded on the mechanical, mathematical, chemical, and humoral physiologies, has been long since abandoned; but the destructive system of Brown has not long quitted the stage, where its place is occupied on the continent by those of Broussais and Rasori, and in Great Britain by the system which derives all diseases from derangement of the digestive functions, or from inflammation. Physiology legitimately embraces, not the study of vital actions, but merely aims at ascertaining and arranging their effects. The important facts which its study discloses, are perhaps infinite in number. As long as we confine ourselves to these we advance at every step, and all is clear and intelligible; but the moment we attempt to inquire into the causes and modes of vital action, we begin to retrograde, and all becomes hypothesis and confusion. Thus, an examination of the organ of sight discovers a wonderful and beautiful optical arrangement, calculated to form on the retina a picture of external objects, exact both in its colouring and outline. The physiologist, examining with attention the different parts of the eye, and the laws of their respective refractions, investigates the means by which distinct vision is secured at different distances; he compares the human eye and its appendages with that of animals which live in water, those which soar into the highest regions of the atmosphere, and those which burrow under ground. He considers the eye of the mole, feeble but protected against injuries likely to be encountered in carrying on its subterraneous works; of the eagle who, poised high in mid-air, selects its victim from the distant pasture; of the fly, whose microscopic organ, with a range of vision scarcely exceeding the limits of contact, distinguishes objects the most minute; and in all he finds variations in the optical instruments at once curious and intelligible. But when he endeavours to advance further in his inquiry, and tries to explain how an image, painted on the retina, produces vision, whether by the means of undulations arising from the rays of light, and propagated along the optic nerve to the brain, or whether because the retina is a nervous expansion, highly organized and framed, so as to feel the coloured image painted on it, he is at once arrested in his progress by the barrier which is everywhere interposed between physical and vital actions, between the mechanism of the organs of sense and the mode in which they produce ideas between body and mind.

But has he, therefore, gained no real knowledge applicable to practical purposes, or has his time been merely spent in a pleasing but useless study? By no means;—being acquainted with the mechanism and arrangement of the optical instrument, he is often enabled to remedy its accidental derangement. By means of a concave glass he corrects a too speedy, by a convex a too tardy, con-

centration of the rays of light. When the crystalline lens becomes opaque, his knowledge of its connections, nature, and position, enables him either to remove it altogether, or to displace it from the axis of vision, or to promote its absorption, and, in order to effect the latter purpose, he mechanically irritates it, knowing by experience that, after such an irritation, the process of absorption commences, although he is quite ignorant of the connection between mechanical irritation and this vital process. He who inquires into the physiology of the brain and spinal marrow can never discover the nature of nervous influence, or the manner in which pressure on these organs destroys, or irritation deranges, the motions of the voluntary muscles, and yet the entire treatment of cerebral or spinal diseases, whether spontaneous or from the effects of injury, is grounded on a knowledge of this physical fact; without it we could not estimate the value or effects of morbid changes in the brain or spinal marrow. On this reposes the *rationale* of the treatment of all convulsive, paralytic, and apoplectic affections.

Although we know not the manner in which the eighth pair of nerves superintends the respiratory process, although we understand not how the phrenic nerve influences the motion of the diaphragm, yet a knowledge of these facts led to a relief of spasmodic asthma, and to the recovery of persons apparently asphyxiated, by means of the galvanic stimulus passed along the course of these nerves. Knowing that some of the nerves, distributed to the face, are destined for sensation, while others serve for muscular motion, in cases of tic douloureux we divide the sentient and not the motive nerves. In these, and a thousand other instances, physical physiology supplies us with information at once interesting and practical; it would be still easier to prove, as in the cases of Brown and Broussais, that vital physiology, by involving us in the discussion of subjects beyond the powers of our reason, never fails to entangle its votaries in a labyrinth, amidst whose mazes they move without progressing, and consume in idle speculations that time and labour they ought to spend in the acquisition of useful knowledge. But I trust the period is at length arrived when this error will be avoided; for, on the whole, it must be confessed, that in consequence of a wrong method of studying, and a misconception of the true objects of physiology, this science has in many instances retarded the progress of practical medicine.

Let us next consider the connection of morbid anatomy with practical medicine. Many have mistaken the end and object of morbid anatomy, and there are not wanting some who even deny its utility, while others again, in their zeal for its improvement, have endeavoured to extend its limits, so as to make it comprehend and embrace in the explanations it affords all the phenomena of disease. It is not easy to determine which of these parties has most injured the cause of practical medicine. Morbid anatomy comprehends not merely decided and permanent structural alteration, but embraces, so far as they are capable of being detected,

even temporary physical changes in internal organs. In order justly to estimate its importance, we should recollect that the first alteration in the texture of a part is not the cause but the consequence of disease, for in every healthy organ the texture is natural, and as every change of texture is produced in consequence of derangement in the vital action of the vascular system of the part, it is obvious that structural alteration must, in the first instance, be always produced by functional derangement. Thus, the physical alterations which attend external inflammation — the tumefaction, the heat, the redness, are not the causes but the consequences of disease. But in thus reducing them to the rank of symptoms, do we diminish their importance? Certainly not. For being immediately connected, as effects, *with* the primary cause, they prove the most useful of all symptoms, in enabling us to ascertain the seat and progress of diseased action. In this respect they possess a manifest advantage over the general or constitutional symptoms. Thus, in cases of spontaneous gangrene, phlegmonous inflammation, or erysipelas, what practitioner would be contented to draw his indications from the general symptoms, disregarding the appearance of the affected part? And yet this is exactly what those persons do, who refuse the aid of morbid anatomy in the treatment of internal disease.

In external diseases most of the physical changes in the affected part can be at once recognised; their diagnosis is therefore comparatively easy, and their treatment well established. In internal diseases the case is widely different, the physical alterations are here beyond the cognisance of our senses; and, in order to ascertain their nature and situation, we must carefully compare the morbid appearances of internal organs, as revealed to us by dissection, with the symptoms during life. Although alteration of structure is in the first instance produced by a disease in the vital action of the part, yet this structural alteration may itself become a new cause of mischief. Thus the vascular system of the lungs, from some unknown cause, assumes such a change of action as produces a deposition into the pulmonary texture of various fluid and solid products, by which the entrance of the air into its vesicles is prevented, and the respiratory function, one of the most important of the body, is thus considerably deranged. Again, whatever be the original vital derangement which causes scirrhous of the pylorus, the obstruction thus formed is a secondary cause of new and important symptoms. Another consideration, which enhances the value of morbid anatomy, arises from the fact, that when diseased action fixes itself in any part of the body, whether external or internal, and there gives rise to physical alterations, experience teaches us, that the progress of the disease may be often arrested by removing its effects. Thus, to recur to the example of external inflammation, the redness, the swelling, the heat of the part are but symptoms, and yet we find great benefit from the applications of remedies capable of diminishing them; hence we leech, and apply cold lotions, etc. From all

these considerations it is evident, that whenever disease is attended with either a temporary or a permanent alteration in the tissue of an internal organ, it will be of the greatest practical importance to ascertain the nature and extent of that alteration, and the progress of practical medicine will be exactly proportioned to the accuracy with which this can be accomplished. Thus, how much has the treatment of pectoral diseases been improved by the application of auscultation and percussion, means which are only useful by enabling us to ascertain the physical alterations induced by the disease, or, in other words, the morbid anatomy of the affected organ. Without their aid, how trace the progress and follow the increase or diminution of pulmonary inflammation?—how demonstrate the existence of dropsical or pleuritic effusion within the chest?—how distinguish with certainty pleurodyne from pleurisy? I could prove the utter impossibility of distinguishing many cases of bronchitic from tubercular phthisis without their assistance. I might refer to chronic emphysema of the pulmonary tissue, a disease of great importance, but actually unknown before the time of Laennec, who first accurately described it in the dead body; indeed, before the application of percussion and auscultation, a perfect knowledge of this derangement of the pulmonary structure in the dead body would not have assisted our diagnosis, for how recognise it during life? I might bring forward dilatation of the bronchial tubes, another disease wholly unknown before Laennec's time, and which, before his discovery, could not be recognised by the common method of observation. I might enlarge upon the great utility of attending to the changes which take place within the chest in measles and scarlet fever, but the benefit resulting from an accurate acquaintance with the morbid anatomy of the thoracic cavity is now so generally acknowledged, that I shall rather choose my illustrations from other classes of diseases.

Nosologists, until very lately, were agreed in attributing considerable frequency to those cases of apoplexy and paralysis which arise from serous effusion into the brain, or from a mere functional inaction or debility of the cerebral and nervous systems. This opinion was founded partly on speculative grounds, and partly on inadequate and imperfect post-mortem examinations, and in practical books the symptoms supposed to announce sanguineous, serous, and nervous apoplexy, were dogmatically laid down. What was the consequence?—Most disastrous, as I have had occasion to witness, in some parts of the continent, where the elderly practitioners still adhered to the practice founded on this false pathology. What can be more melancholy than to see time wasted or misemployed in the exhibition of diuretics, to promote absorption of the serum effused into the brain, or of strong exciting remedies, such as arnica, camphor, etc., to overcome the nervous debility, in cases where copious depletion by the lancet and purgatives were urgently necessary. I do not deny that in some rare cases effusion into the brain is the cause of sudden death from apoplexy. I have seen

such an event supervene in chronic dropsy, but there the termination was very sudden, and the state of the case left no doubt as to the cause; but in the majority of the cases formerly treated as serous or nervous apoplexy a more careful examination would have detected marks of vascular excitement, or local inflammation, a subject I shall treat at large when on the pathology of the brain. A similar error in morbid anatomy led to a similarly erroneous practice in the treatment of hydrocephalus, and many cases of general and local dropsy. The effusion occupied the sole attention of pathologists; the marks of preceding vascular excitement or inflammation escaped their notice.

Time will not permit me to enlarge upon the light which morbid anatomy, rationally pursued, has shed upon diseases of the brain. It is sufficient to remark, that some of the most important modifications of inflammation in that organ have been only lately discovered, and it is only lately that a minute and extensive examination of the different changes the brain undergoes in diseases has begun to introduce a certain degree of regularity and precision into a department where all before was confusion and inaccuracy. Examples of the utility of morbid anatomy might be brought forward without number:—the discovery of local inflammation being at times the cause of a disease in most of its symptoms resembling common ague; the use of the lancet in the cold stage of ague, a practice which may be advantageously resorted to, in cases where each return of the fit is accompanied by a recurrence of inflammation in a vital organ, as the lungs or brain; the connection between inflammation of the mucous membrane of the stomach, and some of those symptoms of fever formerly attributed to mere debility; the influence of cerebral inflammation and congestion, in producing the symptoms formerly vaguely denominated typhus; the low character which fever assumes when accompanied by pneumonia (and that, too, often latent); the symptoms which are produced by follicular ulceration of the intestines, which so frequently occurs in the course of fever; the diagnosis between the pain produced by neuralgia of the abdominal nerves, and that resulting from structural diseases of the intestinal canal; a more accurate knowledge of the state of the mucous membrane in the diarrhoea of phthisis, and in intestinal tympanitis; the numerous improvements in the treatment of diseases of the ear, which followed Itard's investigations concerning the morbid anatomy of that organ;—these and many other discoveries, all replete with practical advantages, are the results of the attention of our contemporaries to morbid anatomy; and, were I to appeal to the records of surgery, I might bring forward examples, if not more important, perhaps more evident and striking; for the invention and success of most capital operations depend on a perfect knowledge of the structural derangements, the removal or cure of which is attempted. Of this, examples suggest themselves on every side, but none is more striking than the one devised by Dupuytren for the cure of artificial anus, the most disgusting and

loathsome malady to which human nature is subject, and deemed altogether incurable, until that excellent surgeon, by a combination of profound pathological and physiological knowledge, succeeded in planning and executing an operation, that were alone sufficient to immortalise his name.\*

The study of morbid anatomy, however, is attended with no ordinary difficulties, and, when imperfectly understood, is liable to lead to erroneous results, for it requires much candour, much patience, and that experience which can be only acquired by long continued practice, to enable us to judge concerning diseased appearances. The power of accurately discriminating in the dead body the traces of disease cannot be suddenly acquired, and so numerous are the various errors to which superficial observers are liable, that much injury has thus resulted to medical science, diseased appearances being in some cases overlooked, and in others recorded where they did not exist. Those who are aware how often the congestion, which frequently takes place immediately before or after death, in the pulmonary tissue, in the mucous membrane of the lungs and alimentary canal, and who know how often this congestion alters the physical properties of these parts, so as almost exactly to simulate the vestiges of inflammation, will understand how it happens that in investigations connected with the real or supposed diseases of these parts, facts have been marshaled against facts, and observations arranged against observations, until the path which promised simplicity and order terminated in perplexity and confusion. Hence the doctrines of Broussais received so many corroborations, and appeared to rest upon a numerous series of undoubted and well-authenticated facts.

The morbid anatomist must of all things beware of seeing too much. He must avoid imposing on himself by everywhere seeing exactly what he expected to see, and above all things let him not always force himself to see something; for many diseases proceed to a fatal termination without having produced any evident morbid alteration.

When I come to treat of the pathology of the brain and nervous system, I shall have occasion to advert to errors which late authors have committed from too great an anxiety on the one hand to reduce to a certain and definite system the morbid appearances of the brain and spinal marrow, as connected with their diseases, and, on the other, to find, in every case where the cerebral or nervous functions had been diseased, lesions of structure to account for the symptoms. Thus, to cite one of numerous instances, I shall have occasion to prove that epilepsy and mania often commence suddenly and violently, without the existence of any organic alteration; and, indeed, that organic lesions are not necessarily connected with these formidable diseases is sufficiently proved by the occasional sudden manner in which they cease. Thus, a gentleman of great literary

\* [He was preceded, however, by the late Dr. Physick of Philadelphia. — *Ed.*]

reputation was many years a patient of mine before his death, which happened in 1831, at the age of seventy. From the age of twenty-five to fifty-five he suffered from violent and frequently recurring fits of epilepsy ; after having continued thirty years the disease ceased suddenly, without any assignable cause, and for the last fifteen years of his life he had not a single fit. I shall have occasion to show you how fine-drawn and how ill-founded the observations of those who profess to account for every nervous disturbance during life by cerebral lesions, who profess to distinguish accurately during life inflammation and irritation of the arachnoid or dura mater from irritation or inflammation of the brain itself, who maintain that one series of symptoms is produced by inflammation of the cortical, and another by inflammation of the medullary, substance, who have strained their eyes to discover, and their veracity to impose upon us, proofs that inflammatory or other diseased states of certain portions of the brain caused invariably similar affections of certain mental functions. These errors of some, even of the most eminent French pathologists, it will be my duty to notice from time to time ; but I am sorry to say that much more unpardonable errors and mis-statements have found their way into English and Irish publications on the pathology of the brain, and which I shall be compelled to speak of hereafter.

Having made the preceding observations on the dangers which arise from an ill-directed application of the studies of physiology and morbid anatomy to the practice of medicine and surgery, I feel myself imperatively called on to present the other side of the question to your view, in exposing the still more dangerous doctrine advocated by those who deprecate the value of pathology and morbid anatomy as only instructive after the death of the patient, and even then as not unfrequently calculated rather to mislead than to advance the interests of practical medicine.

It must be conceded, that he who is only a physiologist, cannot hope to cure disease, and that the mere morbid anatomist will be often misled by post-mortem appearances, if he has not attentively watched the progress of symptoms, and the effects of medicines, during life ; for, unless this be done, he will, as I have already said, often mistake secondary for primary lesions, will confound effects with their causes, and will refer to certain alterations of structure, that which had originated in a functional disorder, a morbid state of parts very different from that which is observed after death. But when, to an accurate knowledge of physiology and morbid anatomy is joined an extensive observation of the progress of symptoms, and the effects of therapeutical agents, how much more certain and satisfactory will be our practical decisions, and how much more likely our efforts to be attended with success, than if we merely studied disease at the bed-side of the patient. In the latter case, we might, indeed, become expert nosologists, be accurately acquainted with certain groups of symptoms, and even not unfrequently adopt the proper method of treatment. These symp-

toms, considered together, we would call by a certain name, and hand down to posterity this new acquisition of medical knowledge, perhaps clothed in the garb of a dead language, and invested with the false dignity of a learned tongue. But what have we really thus effected for posterity? Our followers read our definitions of disease with an acquiescing admiration, and, sure of the efficacy of the remedies we have recommended, they go forth with an overweening confidence in quest of the group of symptoms we have described, and when they have met with them, they look upon their task as already half accomplished, and promise a successful termination of the disease. "Tell me the name of the disease," was the motto of the nosologist, "and I will tell you the remedy;" but, gentlemen, I will engage to tell you the names of a hundred diseases, without your being able to name the proper method of treatment. I tell you a man has dropsy, his limbs are anasarcaous, water is accumulated in the peritoneal cavity, his urine is scanty, and his thirst increased. Will you, from this very excellent nosological definition, venture to prescribe for this case of dropsy? For the sake of the suffering patient, and your own conscience, prescribe not on such data. And yet I regret to be obliged to say, that such a method of procedure is by no means rare, nay, it is even a matter of daily occurrence. But this case of dropsy will not yield. Some other boasted specific hydragogue or diuretic is had recourse to; still the patient grows worse and worse, and finally dies, but his friends are not discontented with the medical attendant, who excuses himself by asserting that he has successively resorted to every remedy which has been recommended in dropsy; and, in truth, if you look over the list of medicines exhibited in rapid succession, you will probably find that his excuse is not unsupported by facts. But these cases in which every thing has been tried, are exactly those in which nothing has been tried, in which medicine has followed medicine, and each symptom of disease has indiscriminately been the object of attack, until death approaches with accelerated step, and charitably closes a scene distressing to humanity, and disgraceful to the cause—I was going to say—of science; but who will venture to give so ennobling a name to this pseudo-practical knowledge—this worse than absolute ignorance?

Gentlemen, I am not combating phantoms; I do not, Quixote-like, contend with imaginary giants: no, what I have described, exists; the picture I have drawn has many an original. But let us have done with this subject; let us turn to the gratifying considerations of the progress which practical medicine is making under its parent science—physiology and morbid anatomy.

The reason of man is now more fully employed than at any former period, a vast store of mental power, a vast mass of mind, is everywhere at work; what formerly was vainly attempted by the labour of a few, is now easily accomplished by the exertions of the many. The empire of reason, extending from the old to the new

world, from Europe to our Antipodes, has encircled the earth — the sun never sets upon her dominions — individuals must rest, but the collective intelligence of the species never sleeps: at the moment one nation, wearied by the toils of day, welcomes the shades of night, and lies down to seek repose, another rises to hail the light of morning, and, refreshed, speeds the noble work of science!

All inquiries commence, as it were, at the same point, as the labours of their predecessors are equally at the disposal of all, and, consequently, it is not surprising we should often find them arriving together at the same end; thence the numbers of simultaneous discoveries of the same fact now so common. It is not unusual to find the publications of France, Germany, Italy, and England, simultaneously announcing the same discovery, and each zealously claiming for their respective countrymen an honour which belongs equally to all. I am sorry to say that, with some splendid exceptions, this interesting and innocent controversy has been carried on by other countries, while Ireland has put in no claim for a share of the literary honours awarded to the efforts of industry or genius. But, gentlemen, I hope that this state of inaction, this state of mental torpor, has ceased, and that the time has passed away when we could not point out among our brethren any who had advanced the boundaries of the medical sciences, and thus promoted the interests of humanity. Already have the names of several of the senior members of the profession been spread abroad; already has the scientific character of this city been elevated by such men as Dease, Blake, Colles, Carmichael, Cusack, Crampton, Marsh, and Kirby; and already have some of the junior members of the profession attached their names to discoveries which shall be commemorated as long as anatomical sciences are cultivated; I need scarcely add that I allude to the names of Jacob and of Houston. The interesting descriptions given by these gentlemen of their respective discoveries, in a department of human anatomy in which all further discovery was looked upon as hopeless, are probably known to you all, and therefore it is unnecessary now to enlarge upon them. Neither have we, at present, leisure to enter into the no less interesting field of investigation which Dr. Corrigan has opened, by the publication of his experiments on the sounds and motions of the heart — experiments leading to conclusions so novel, that most physiologists were at first incredulous, and many even ventured boldly to call into question their accuracy. Without, at present, venturing to decide whether Dr. Corrigan's opinions be in every respect correct, I may assert that his paper is written in the true spirit of philosophical inquiry, and that he deserves opponents of a far higher grade than those who have endeavoured to refute his arguments in the English periodicals.

With regard to the treatment of disease, we must not omit the discovery, by Mr. Carmichael, jun., of this city, of the curative effects of spirits of turpentine in iritis; for although we were in possession of two valuable remedies for the cure of this disease,

belladonna and mercury, yet there are cases in which it is useful to be able to accomplish a cure without the aid of salivation.

It is with feelings of the greatest satisfaction and pride, that I claim the right of adding to this list the names of three gentlemen, whose friendship I have long enjoyed, Mr. Adams, Mr. M'Dowell, and Dr. Stokes. Of the two former, it is unnecessary to speak, their contributions to science are so well and so duly appreciated. Concerning the latter, my colleague, Dr. William Stokes, I shall impose upon myself an unwilling and constrained silence, partly because his merits claim a warmer and longer eulogy than would suit this time and place, but chiefly because his labours have placed him in a position, as far elevated above the necessity of praise, as above the fear of censure. Neither shall I allow myself to eulogise, as they deserve, the talents and exertions in the cause of science rendered by Professors Apjohn, Harrison, Kane, Montgomery, and E. Kennedy. They all rank high among the successful cultivators of some of the most useful departments connected with our art; their names, associated with those already enumerated, form a catalogue the subject of congratulation for the present, of happy augury for the future, for cold must be the breast of him who will not hail with joy every symptom of our country's literary regeneration, dead the feelings which are not elated at the boon conferred on our species by every advance made by those who devote themselves to the grand, the noble pursuit of relieving the suffering, of healing the diseased; but time bids me stop: I shall, therefore, conclude by observing that the attention lately devoted to the distinctions between real and pseudo morbid appearances, the diligent cultivation of morbid anatomy by men not the slaves of preconceived opinions, the abandonment of all systems whose baseless fabric rests on the phantoms of vital physiology, the importance now justly attached to medical statistics, to the study of endemic and epidemic maladies, to the operation of morbid poisons: these, and various other circumstances, give us reason to hope that the progress of the human mind, in investigating the means of preventing and curing diseases, will not be less rapid than it has been in the other departments of knowledge; and thus it will be proved, that if man has passions which impel him to the destruction of man, if he be the only animal who, despising his natural weapons for attack or defence, has devised new means of destruction, he is also the only animal who has the desire, or the power, to relieve the sufferings of his fellow-creatures; the only animal in whom the co-existence of reason and benevolence attests a moral as well as an intellectual superiority.

## LECTURE II.

Case of chronic cough — Remarks on bronchial secretion — Expectoration never performed during sleep — Effects of catarrhal attacks frequently recurring — Account of remedies employed — Great power of nitrate of potash, combined with tartar emetic, in subduing inflammation — Observations on the secretion of air from the mucous membrane of the intestines in certain pulmonary affections — Efficacy of sulphur in chronic bronchitis — Sensation of tickling which precedes cough — Cough from worms — Hysterical cough — Pulmonary irritation from a syphilitic taint — Pulmonary irritation connected with a gouty diathesis; with a scorbutic habit; with scrofula.

ALLOW me to direct your attention to-day to the case of J. Jowson in the chronic ward, labouring under an attack of exasperated chronic bronchitis — a disease which derives its chief importance from the circumstance of being exceedingly common. There is no morbid affection of the system more frequent or more general than chronic bronchitis; it is of every day occurrence in dispensary practice; it is one of those cases which you will be constantly called on to treat; and hence the study of its nature and treatment has strong claims on your attention.

This man is, as you have seen, about the middle age in point of years, but he is old in constitution. In this country you will find most of the labouring poor exhibiting symptoms of premature old age — the combined result of poverty, intemperance, and hardship. Obliged to work in the open air in bad weather, they get catarrhal affections, which are renewed by repeated exposure, and prolonged for want of proper care. The natural effect of cold frequently renewed and generally neglected is, that a tendency is produced in the bronchial mucous membrane to become congested and inflamed with facility, until at length the derangement becomes permanent, and the mucous membrane no longer returns to its normal and healthy condition during the intervals.

The secretion of the mucous membrane of the bronchial tubes, in a perfectly healthy person, is almost entirely destitute of matter to be expectorated. In the normal state, the secretion of the bronchial mucous membrane, though continually going on, scarcely ever exists in superfluous quantity, for a certain proportion of it is carried off by exhalation or absorption; *a perfectly healthy person, breathing a pure air, has no expectoration whatsoever.* The moisture secreted by his bronchial mucous membrane contains nothing that the expired air cannot carry away in vapour, without leaving any residuum which, gradually accumulating, would at length require to be expectorated. In this respect the bronchial mucus in the healthy state differs from the mucus of other membranes of the same class; but disease destroys this beautiful provision, and gives rise to a secretion of morbid mucus which cannot be gotten rid of in the usual way, and which must therefore be expectorated. Hence it is that persons, in whom a chronic state of

congestion of the bronchial membrane has been generated by repeated colds, have a secretion of superfluous matter always going on, and are constantly expectorating. This may continue for several years without much inconvenience; the principal annoyance the patient suffers is in getting up the phlegm in the morning. At this period there is always an accumulation of fluid in the lungs after the night, during which the cough is less frequent, and expectoration less copious.

Here let me remark, that, although a person may cough violently during his sleep, he never expectorates. Expectoration is accomplished by the attention being directed to the chest, by an act of volition being put in force, so as to cause a constriction of the bronchial tubes, and generate a current of air of sufficient strength to expel the mucus. To effect this, the mere act of coughing is not sufficient, and consequently *we do not expectorate during sleep*; for this purpose it is necessary for the patient to be awake.

Frequently recurring catarrhal affections, besides generating a state of chronic derangement of the mucous lining of the lungs, have a necessary tendency to produce other bad effects. Dyspnœa is an ordinary attendant on chronic bronchitis; the vesicular tissue, enfeebled by disease, loses its natural elasticity; and hence the act of respiration is performed weakly, and with considerable difficulty. In addition to this, the stress thrown on the air cells and passages gives rise to emphysema and dilatation of the bronchial tubes.

When this man came into the hospital, he was labouring under an exacerbation of his chronic bronchitis, from a fresh attack of cold; he also suffered from dyspnœa with a tendency to emphysema, and had been much debilitated by the frequent recurrence of his pulmonary symptoms. I do not intend to make any particular observations here on acute bronchitis supervening on chronic; it is a dangerous disease, requiring prompt and careful attention. I merely refer to this case to point out the remedies which were employed, and the principles which guided me in their selection.

At the time of our patient's admission, the fever which accompanied the acute attack had subsided. His pulse was tolerably quiet, neither did he present any derangement of the heart's action, and, so far, had escaped one of the consequences of chronic disease of the lung — namely, dilatation and hypertrophy of the right ventricle. Observe, the most important features in this case, so far as treatment is concerned, were these: there was no general inflammatory condition of the system present; he had neither hot skin nor quick pulse; his expectoration was copious; the chest sounded well on percussion, and the only stethoscopic phenomena observed were extensive minute and moist bronchial râles. The case then stood thus: extensive bronchial inflammation with copious expectoration, unaccompanied by fever, and occurring in a debilitated constitution. All weakening measures were therefore contra-indicated. It is true that the man had dyspnœa, and complained of

tightness across his chest — circumstances which might appear to demand the use of the lancet or leeches; if these means had been employed, he would certainly have experienced some relief; but in the course of a few hours the symptoms of distress would have returned, the weakness superinduced by bleeding would give rise to increased secretion into the bronchial tubes, and the patient would be worse than before. Under these circumstances, we refrained from using the lancet or leeches; but, deeming it advisable to get rid of the last traces of inflammatory action, we gave the following mixture: —

R Misturæ amygdalarum, 3xij.,

Nitratis potassæ, 3ij.,

Tartar. emeticæ, gr.j.,

Tinctur. opii camphorat., 3ss.

Ft. mistura pectoralis, sumat cochleare j., amplum omni horâ, vel urgente tusse.

In explaining the rationale of this mixture, it is hardly necessary for me to state why the almond emulsion was used. In all cough bottles it is of importance that the basis should consist of some mild mucilaginous fluid; and hence we generally employ for this purpose demulcent syrups, emulsions made with olive oil, spermaceti, or almonds, or decoctions of mucilaginous seeds and roots. With the almond emulsion we combined tartar emetic and nitrate of potash — both antiphlogistic remedies, and calculated to act with peculiar effect in relieving congestion of the bronchial mucous membrane. You are aware that nitrate of potash in large doses is a powerful antiphlogistic, and you have seen it prescribed with excellent effects in cases of acute arthritis treated in this hospital. Nitrate of potash, when given to the amount of two or three drams in the day, combined with two or three grains of tartar emetic, is, next to bleeding, the most efficient means we possess of reducing inflammatory action; and were I to be asked what remedies I should employ in combating inflammation — supposing there were no such things as the lancet, or leeches, or calomel — I should certainly say nitrate of potash and tartar emetic. When given in small doses this combination proves also extremely serviceable in less severe cases, and it was on this account we gave it in the present instance. To this we joined the camphorated tincture of opium, convinced that its stimulant properties could not prove injurious when combined with antiphlogistics, although it would be improper to administer it alone. Experience has taught that when camphorated tincture of opium is given, in cases of chronic cough with expectoration, it will (if much inflammatory action be present) check the expectoration, and bring on dyspnoea. But when combined with nitrate of potash and tartar emetic, its bad effects are corrected, while its sedative influence remains unimpaired.

In addition to this, I ordered the nitro-muriatic acid liniment to be rubbed over his chest. This liniment we are much in the habit

of prescribing where a rubefacient is required. It is made by diligently mixing one dram of nitro-muriatic acid and one ounce of lard, by means of a wooden or ivory spatula. When this mixture is complete, two drams of spirits of turpentine are added; these ingredients soon separate from, and mutually react upon each other, so that the liniment is spoiled; we, therefore, never make it in large quantities. As his bowels were constipated, I gave him a pill composed of three grains of blue pill, quarter of a grain of colchicum, two grains of scammony, and half a grain of capsicum. Colchicum acts on the biliary secretion, particularly when combined with blue pill, and hence promotes the general action of the intestines. With these I combined a little capsicum, in consequence of the patient's complaining of being annoyed by constant flatulence. It is a curious fact, that every chronic derangement of the bronchial mucous membrane is accompanied by flatulence. Whether this arises from the irritation of the bronchial membrane spreading by continuity of tissue, and rendering the tongue foul, the stomach weak, and the digestive function unnatural; or whether the derangement of the bronchial mucous membrane, and the imperfect performance of the function of respiration, causes the secretion of air from the lungs to be diminished, in consequence of which air is secreted from the intestinal mucous membrane by a vicarious action — I cannot exactly state, but I think the latter hypothesis not very improbable. It is well known that the mucous membrane of the stomach and bowels enjoys the power of secreting and absorbing air; it secretes carbonic acid, nitrogen, and also other gases which seem peculiar to it — such as sulphuretted hydrogen. I am not aware that there is any distinct evidence that the last-named gas is ever secreted by the bronchial mucous membrane, but, as there are some cases in which the breath is remarkably fetid, I think it remains for future experiments to decide whether it may not be so under certain circumstances. It is, however, by no means improbable, that when an adequate cause produces considerable derangement in the respiratory function, and alters the nature of the aërial secretion from the lung, the mucous lining of the stomach and bowels may take on a vicarious action, and secrete gases analogous to those which in the normal state are secreted by the mucous membrane of the bronchial tubes. I think I have seen some well marked examples of this translation of the function of secreting air from the pulmonary to the intestinal mucous system in cases of spasmodic asthma and hysteria. I have seen patients who, previously to an attack of asthma, had no symptoms of flatulence, and observed that, accordingly as the disease proceeded and the derangement of the respiratory function increased, the bowels became distended with air. In hysteria, also, where derangement of the respiratory function is plainly denoted by the heaving of the chest, sighing, and dyspnoea, there is generally enormous and sudden inflation of the belly, loud borbyrygmi are heard, and there is a constant disengagement of air upwards and downwards.

But to return to our patient. After we had removed all traces of active inflammation, and the case had been reduced to one of ordinary chronic bronchitis, we changed his cough mixture for the following: —

R Misturæ ammoniaci,  $\frac{3}{4}$ vj.  
 Carbonatis sodæ,  $\frac{3}{4}$ ss.  
 Tincturæ opii camphorat.,  $\frac{3}{4}$ ss.  
 ————— hyoscyami,  $\frac{3}{4}$ j.  
 Vini ipecacuanhæ,  $\frac{3}{4}$ ij.  
 Fiat mistura pectoralis, sumat. cochl. j. amp. pro dose.

The carbonate of soda was given with a view of removing some acidity of stomach which he complained of; besides, it is a fact that alkalies produce good effects in many cases of pulmonary irritation, as must have struck you from witnessing the success of the popular remedy for hooping-cough, recommended by Mr. Pearson. You will observe, gentlemen, how very different this cough mixture is from the former, it is much more stimulating, and, at the same time, more powerfully anodyne, the opium being here less diluted, and being aided by henbane; the addition of ipecacuanha was intended to prevent a too speedy action on the part of the other ingredients, in diminishing the expectoration and constipating the bowels.

I wish to call your attention to the plan of treatment, not with reference to this case alone, but with respect to chronic bronchitis in general. We first gave a combination of nitrate of potash and tartar emetic, with the view of removing any remaining traces of inflammatory action; we next prescribed the misturæ ammoniaci, with camphorated tincture of opium and carbonate of soda, etc.; and, finally, when the cough became entirely chronic, we gave the compound iron mixture, with tincture of hyoscyamus, in draughts, and an electuary, consisting of sulphur, cream of tartar, and senna. I need not repeat what you will find in every treatise on *materia medica*, with respect to the use of the compound iron mixture; it is not to be given until all traces of fever and local inflammation are removed, and never until the secretion from the lungs is copious, and expectoration free. In such cases, the patient is generally weak, and the inordinate secretion adds to his debility. Here the compound iron mixture proves extremely serviceable, but you should commence its use with caution. Some persons are in the habit of giving it in doses of half an ounce, two or three times a day; this I never do; I begin with a dram, twice or three times a day, in an ounce of spearmint water, and add from half a dram to a dram of tincture of hyoscyamus. The dilution with mint water, and the addition of tincture of hyoscyamus, render it more valuable, by causing it to be more easily borne by the system, and less likely to be rejected by the stomach.

Let me now explain my reasons for ordering the following electuary: —

R Electuarii sennæ, 3ij.  
 Pulveris supertart. potassæ, 3ij.  
 Sulphuris loti, 3ss.  
 Syrupi zingiberis, q. s.

Ut fiat electuarium, sumat cochleare, j. parvum bis vel ter quotidie.

In the first place, when giving any stimulant medicine internally, it is essentially necessary to attend to the state of the bowels; in the next place, keeping the bowels freely opened, has a very remarkable effect in diminishing inordinate secretion from the bronchial tubes. Where the patient's strength can bear it, I often diminish supersecretion from the lung by strong hydragogue purgatives, as you saw in the case of a patient in the chronic ward, who had orthopnoea, and such an excessive secretion into the bronchial tubes as to threaten suffocation. The patient being a strong man, and having no symptom of intestinal irritation, I prescribed a bolus, composed of a grain of elaterium, two of calomel, ten of jalap, and five of scammony, forming a powerful hydragogue purgative, which produced several fluid discharges. The man bore its operation well, and I repeated it in two days with the most decided benefit; indeed, he experienced from it more complete relief than he would have done from bleeding, blistering, or any other remedial means. In some cases of bronchitis with excessive secretion, you will be able to produce very striking effects by the use of hydragogue purgatives: this, however, will require both judgment and discretion, and it should be borne in mind, that, in the majority of cases, there are many circumstances which contraindicate their employment.

With respect to the use of sulphur in this case, I was led to prescribe it, in this and many other similar cases, from observing that chronic cough, and long-continued congestion of the bronchial mucous membrane, were more effectually relieved by the use of sulphureous waters, such as the Lucan and Harrowgate Spas, than by any other remedy that could be devised.\* I may here also observe, that the Lucan waters produce very striking effects in diseases of the skin, and that I have seen intractable cases of psoriasis, which lasted for years, yield to the use of the Lucan waters. It would appear that sulphur, when taken into the system, is either eliminated by the kidneys in the form of sulphates, or exhaled from the skin and mucous tissues in the form of sulphuretted hydrogen, and in this way we arrive at some explanation of its action in diseases of the skin, and chronic irritation of the bronchial mucous membrane. In fact, paradoxical as it may appear, sulphur, although evidently stimulating, is nevertheless very efficacious in curing many diseases connected with, or depending on, inflammation or congestion. Thus exhibited internally and pro-

\* [May not this be the cause of the great celebrity enjoyed by the Red Sulphur Spring of Virginia, which although a weak is a very pure sulphureous water, and is certainly beneficial in chronic irritations of the bronchial and alimentary mucous membranes. — Ed.] To which see also S. and C. — 68-

perly combined, what remedy gives such prompt and certain relief in that painful affection, piles? How rapidly does the specific irritation of the skin, termed scabies, yield to its use! These, and similar facts, which might be brought forward in abundance, ought to countenance the use of this medicine in certain chronic inflammatory affections of the bronchial tubes. The celebrated Hoffman was in the habit of adding sulphur to his cough prescriptions in all cases of chronic bronchitis in the aged and debilitated; and I have no doubt that from five to ten grains of sulphur, taken three or four times in the day, is one of the best remedies that can be prescribed in cases of chronic cough, accompanied by constitutional debility and copious secretion into the bronchial tubes. Within the last four years, my attention has been particularly directed to the use of sulphur in this and other affections, and I can state from experience that it is a most valuable remedy. As it has a tendency to produce elevation of the pulse, increased heat of skin and sweating, it will be necessary to temper its stimulant properties by combining it with cream of tartar, which is a cooling aperient, and has the additional advantages of determining gently to the kidneys.\* The addition of the electuary of senna gives additional value to the combination, and quickens its action on the intestines.

Such, gentlemen, are the principles that guided me in prescribing for this man. The long continuance of the complaint, the serious and extensive derangement of the pulmonary mucous membrane, the age, debility, and impoverished circumstances of the patient, forbid me to hope for a perfect cure; but he has been much relieved, and the same remedies applied to less desperate cases would have produced very striking effects. Still, if fortune were this moment to prove favourable to the poor fellow, if, when he leaves the hospital, instead of returning to hardship and exposure, he had the means of living in comfort, taking proper care of himself, traveling for health and amusement, and using a course of chalybeate spa waters, I have little doubt that with these aids the reparative powers of nature would succeed in obliterating every trace of pulmonary derangement.

Permit me, gentlemen, to make a few observations here on what is popularly termed, cough. What is cough? A sudden and violent expulsion of air from the lungs, produced by forcible contraction of the diaphragm, aided by the abdominal and other expiratory muscles. What is the cause of cough? Pulmonary irritation. What is the nature of this pulmonary irritation?

Here, gentlemen, is a question which every practitioner should put to himself when called on to treat a case of cough, and what affection is there which so frequently demands our assistance, and tasks our ingenuity? How abundant, how varied, are the examples of cough we meet with in our daily practice! How obscure do we not find its nature on many occasions, and how difficult and per-

\* Baglivi has well said, "In morbis pectoris ad vias urinæ ducendum est."

plexing its treatment! Where the source of irritation is manifest, where the nature of the disease is simple and easily detected, where, after a proper examination, we can point to some part of the respiratory system, and say here is the seat of the disease; in such cases, indeed, our course is sufficiently clear; we may proceed with confidence, and practise with success. But how often are we, after weeks and even months of close and painful attention, baffled in our best-directed efforts, and forced to admit the humbling conviction that all our remedies are inefficient and useless, and that our character, as well as that of the profession, is likely to suffer in public estimation! How often, too, do we discover with surprise, that the cough which we have been treating for weeks as a pure pulmonary affection, depends not on any primary derangement of the respiratory system itself, but upon the irritation of some distant organ, or upon peculiar conditions of the whole economy!

Before I proceed to inquire into the nature of the various sources of pulmonary irritation producing cough, I wish to remark that the exciting cause, or, in other words, that which immediately precedes and seems to give rise to a tendency to cough, is a sensation of tickling in the mucous membrane of the trachea, close to its bifurcation, and opposite the hollow at the fore part of the neck. It is also a curious fact that this sensation of tickling or itching is peculiar to this situation, being never felt in any other part of the pulmonary mucous system. Whether the disease be seated above, as in case of laryngeal affections, or whether it be below, as in case of disease of the lining membrane or parenchyma of the lung, it is here alone that the tickling sensation is felt. Another circumstance equally remarkable, and equally difficult of explanation, is the effect of position in cough. Persons labouring under slight bronchitis, or rather slight inflammation of the trachea, who scarcely cough half a dozen times in the course of the day, will, the moment they lie down at night, be seized with a violent and harassing cough, which may last for several minutes, and sometimes for hours, with little intermission. We can easily understand why empyema or pneumonia of one side of the chest may produce cough in certain positions and not in others, for here we have an obvious physical cause; the accumulated fluid in the pleural cavity in the one case, and the diseased lung, whose specific gravity has been much increased by solidification, in the other, exercise an inconvenient degree of pressure on the sound lung, and hence give rise to irritation and cough, particularly in those positions which favour the operation of these physical causes of irritation. Here, however, the cause of irritation is very obscure. It may (but this I merely offer as an hypothesis) depend on the fluid secreted by the mucous membrane trickling over that part of the trachea where the tickling sensation is felt, the flow of mucus to this part being favoured by the recumbent position. That it does not depend on any supposed temporary congestion and irritation of the lung, from the impression made on the skin by cold bed-clothes, I am quite convinced, for I have repeatedly observed

it in persons warmly dressed, from merely lying down on a sofa close to the fire. You will, therefore, bear in mind, gentlemen, that although usually, when coughing is induced by any sudden change of position, we may infer that it is connected with some serious lesion of the lungs or pleura, yet we must not attach too much importance to this symptom in arriving at this conclusion, for cases are occasionally met with, in which mere tracheal or bronchial inflammation is attended with the same symptom to a very remarkable degree.

I may observe, *en passant*, that the sensation of tickling or itching appears to be almost exclusively confined to the skin. Here it appears to be dependent on slight causes, apparently incapable of producing that modification of nervous sensation termed pain. In other cases it seems to be connected with the rise and decline of the phenomena which indicate inflammatory action, arising in the first case (where it is generally less observable) from that nervous modification which precedes inflammation, and in the second being connected with some change in the nerves of the part which precedes its return to a healthy condition. It does not appear to affect the mucous tissues, except in a very slight degree, and under peculiar circumstances. It is not observed in the pulmonary mucous tissue, except at that part of the trachea which I have already mentioned, and it does not occur in any part of the intestinal mucous membrane. The only parts connected with the intestinal tube, in which it is felt, are the nose and on the anus, and here it is within the reach of scratching, the ordinary mode of relief. This is a fortunate circumstance, gentlemen, for if any part of your bowels were to itch as your skin sometimes does, the annoyance would be quite intolerable. If the presence of lumbrici in the small intestines, instead of producing a troublesome itching of the nose, as it often does,—if it produced, I say, a degree of itching equally intense in the mucous membrane of the bowels and stomach, what patient could endure greater torments than a person so afflicted? If ascarides gave rise to as intense a degree of itching within the colon, as they occasion at the verge of the anus, how dreadful would be the suffering thus induced!

Passing over the obvious and well known sources of pulmonary irritation, producing cough, such as bronchitis, pneumonia, etc., the first cause to which I shall direct your attention is one of not unfrequent occurrence, and where a mistake in diagnosis may lead to a practice useless to the patient and discreditable to the practitioner. The best mode of illustrating this is by giving a brief detail of a case which I attended with Dr. Shekleton. A young lady, residing in the neighbourhood of Dorset street, was attacked with symptoms of violent and alarming bronchitis. The fits of coughing went on for hours with extraordinary intensity; it was dry, extremely loud, hollow, and repeated every five or six seconds, night and day, when she was asleep as well as when she was awake. Its violence was such that it threatened, to use a vulgar

but expressive phrase, to tear her chest in pieces, and all her friends wondered how her frame could withstand so constant and so terrible an agitation ; and yet she fell not away proportionally in flesh, had no fever, and her chest exhibited nothing beyond the râles usually attendant on dry bronchitis. She was bled, leached, blistered, and got the tartar-emetic mixture, but without experiencing the least relief. We next tried antispasmodics, varying and combining them in every way our ingenuity could suggest, still no change. We next had recourse to every species of narcotics, exhibiting in turn the various preparations of conium, hyoscyamus, opium, and prussic acid, but without the slightest benefit. Foiled in all our attempts we gave up the case in despair and discontinued our visits. Meeting Dr. Shekleton some time afterwards I inquired anxiously after our patient, and was surprised to hear that she was quite recovered and in the enjoyment of excellent health. *She had been cured all at once by an old woman.* This veteran practitioner, a servant in the family, suggested the exhibition of a large dose of spirits of turpentine, with castor oil, for the purpose of relieving a sudden attack of colic ; two or three hours afterwards the young lady passed a large mass of tape worm, and from that moment every symptom of pulmonary irritation disappeared.

The next kind of cough, in which the cause of pulmonary irritation is often misunderstood, is that which occurs in hysterical females. This kind of cough is one of the most alarming diseases in appearance you can possibly witness ; in some it is loud, ringing, incessant, and so intensely violent, that one wonders how the air-cells, or blood-vessels, escape being ruptured. In others it is quite as incessant, occurring every two or three seconds, night and day, but is not very loud, and, indeed, in some it scarcely amounts to more than a constant teasing hem ; in general the pulse is quick, but it is the quick pulse of hysteria, not of inflammation or fever. The patient suffers no aggravation of the cough from inspiring deeply, and her countenance exhibits no proof of malaëration of the blood, on the contrary it is blanched and pallid. She complains of variable or deficient appetite, headache, cold feet, and irregular or absent catamenia, although the cough continues for weeks, or even months, she does not emaciate like a person in incipient phthisis, although so much disturbed by the cough, and subsisting on so small a quantity of food.

Here the history of the case, a knowledge of the patient's habit, and the use of the stethoscope, are of great value. You will find that the patient is subject to hysteria, that she is generally pale and of a nervous habit, that the attack came on suddenly, and was superinduced by mental emotion, or some cause acting on the nervous system, or else arose gradually as one of the sequelæ of catamenial disturbance, that the heat of skin and state of pulse are by no means proportioned to the violence of the symptoms, and the stethoscope will tell you that the signs of organic derangement of the lung are absent. You will thus be enabled to arrive at an

accurate notion of the nature of the disease, and you will save the patient from the useless and often dangerous employment of anti-phlogistic means. Bleeding and leeching are, generally speaking, injurious; such cases are best treated by stimulants, antispasmodics, and stimulant purgatives, together with the change of air, traveling, and the use of chalybeate spa waters.\*

The third species of obscure cough, to which I shall direct your attention, is one of deep importance for many reasons. It is that species of cough which depends upon pulmonary irritation connected with a venereal taint in the system. That syphilis may attack the pulmonary as well as the cutaneous, osseous, mucous, and other tissues, is not a discovery of modern times; it is a form of the disease long known, and you will find it mentioned by many of the old writers. Since syphilis has been classed by Willan and others among diseases of the skin, this notion seems to have been either abandoned or forgotten, but, as it strikes me, with very little justice. I entertain a firm conviction, that syphilis may affect the pulmonary as well as it does the cutaneous, or mucous, or osseous tissues; and that a patient, labouring under a venereal taint, may have irritation from this cause set up in the lung as well as in any of those organs in which it is usually manifested. The first person who mentioned this circumstance to me was the late Mr. Hewson, and since that time I have had repeated opportunities of confirming the truth of his opinion. Richter, Alibert, and Paget have well observed, that Willan and Bateman's classification of diseases of the skin is liable to the paramount objection, that it has no reference to the constitutional origin of cutaneous affections. I have the very same fault to find with modern treatises on diseases of the lungs. Pathologists have indeed acquired most accurately into the numerous morbid changes to which the pulmonary tissue is subject, but they have omitted a no less important part of their task, which is to investigate the state of constitution which originated these changes. The agency, indeed, of scrofula has been inquired into with care, but how little attention has been paid to rheumatism, gout, syphilis, and scurvy, the fruitful sources of numerous diseases of the chest.

By far the most interesting point connected with this affection is its diagnosis; on this every thing depends. The great importance attached to the diagnosis arises from the circumstance of this disease presenting symptoms analogous to, and consequently being frequently confounded with, phthisis. A patient comes to consult you for cough; you find him pale, emaciated, and feeble; he sleeps badly, and is feverish at night, and has a tendency to sweat. Here there may be a double source of error. If the disease be mistaken for tubercle, and mercury not given, bad consequences will result;

\* [I have known a case of this kind yield immediately to a seton in the nucha after almost all remedies had failed. But no one remedy is at all certain; chalybeates with rhubarb, vegetable tonics, and sea bathing, are the best remedies, for the largest number of cases. — *Ed.*]

on the other hand, if tubercles be present, the effect of administering mercury will be to precipitate the disease to a fatal issue.

What is the nature of this disease, and how are you to recognise it? Mainly, I answer, by the history of the disease. If the patient's sufferings have commenced at the period of time, after primary sores on the genitals, when secondary symptoms usually make their appearance; if some of his complaints are clearly traceable to this source; if, along with debility, night-sweats, emaciation, nervous irritability, and broken rest at night, we find cough; and if this group of symptoms have associated themselves with others, evidently syphilitic — such as periostitis, sore throat, and eruption on the skin — then we may, with confidence, refer all to the same origin, and may look upon the patient as labouring under a syphilitic cachexy, affecting the lungs as well as other parts. In forming this diagnosis much caution and care are necessary, and we must not draw our conclusion until we have repeatedly examined the chest by means of auscultation and percussion; if these fail to detect any tangible signs of tubercles, we may then proceed to act upon our decision with greater confidence, and may advise a sufficient but cautious use of mercury. Under such circumstances, it is most pleasing to observe the speedy improvement in the patient's looks and symptoms; the fever, night-sweats, and watchfulness diminish; he begins to get flesh and strength, and with the symptoms of lues, the cough and pectoral affection disappear. I am not prepared to say which of the pulmonary tissues is most usually attacked by the venereal poison, but I believe that it chiefly tends to the bronchial mucous membrane, although, like other animal poisons — *e. g.*, those of measles and scarlatina — it may also occasionally produce pneumonia.

The fourth species of obscure pulmonary irritation, producing cough, is that which is connected with a gouty diathesis. Gout may attack almost every tissue in the body. We may have it in the joints, as you are all well aware of; we may have it in the muscles and muscular aponeuroses, forming what has been termed the rheumatic gout; it occurs frequently in the fibrous tissues, and I have several times observed it in the cellular substance of various parts of the body, forming either diffuse oedema or tumours, which are exceedingly tender to the touch, and which are removed by treatment calculated to relieve the constitutional affection. It may attack the heart, giving rise to true pericarditis, or else to a functional disease with palpitations — a sensation of fluttering and sinking about that organ, and very remarkable intermission of the pulse; or it may affect the stomach, occasioning dangerous spasm or various dyspeptic symptoms; or it may seize on the intestines, producing irritation, colic, and gouty diarrhoea. I remember a patient, of a confirmed gouty habit, expressing a great deal of surprise at getting an attack of gout in the testicle, for he could not conceive how a disease which generally affects the joints could occur in an organ so different in its nature. I replied that the

matter could easily be explained; because fibrous tissue, which gout most frequently attacks, enters into the composition of the testicle as well as that of the joints. Indeed, the testicle, with reference to the texture of its envelopes and the extent of motion it enjoys, may be said to be provided with a sac-like joint. In like manner, gout very frequently attacks the mucous membrane of the trachea or bronchial tubes, causing a dry, annoying, and often a very obstinate cough. Where this cough comes on along with the fit of inflammation of the joints, its true nature is frequently overlooked, and it is believed to have originated in cold, and to be *mére* common bronchitis. No matter what be the cause of inflammation in a gouty habit — no matter what the organ attacked by the inflammation be — it almost invariably assumes the character of true gouty inflammation. If a gouty person sprains a toe or an ankle, matters, after progressing for a time in the ordinary way, are sure in the end to exhibit a change of character; and the inflamed parts are observed either to grow unexpectedly worse, or to become stationary, at a time when a speedy termination of the local affection seemed approaching. This is owing to its being now modified by the constitutional tendency to gout, which localises itself in the affected part. Precisely the same relations may be often observed between common bronchitis, produced by cold in a gouty habit, and the gouty bronchitis it indirectly produces. Gouty bronchitis often becomes chronic, continuing until it is relieved by a regular fit of the gout in the extremities.

The fifth species of pulmonary irritation, in which the source of the disease is more or less obscure, is that which is connected with the scorbutic diathesis. It is important to be aware of this, particularly for those who have charge of the health of the poorer classes, which is almost of more value than that of the rich, for on it their labour and their means of support depend. Among the poor, particularly in cities where the majority live on salt provisions, the scorbutic diathesis is very prevalent. It manifests itself either in the form of purpura, or in tendencies to hemorrhage from the nose, stomach, bowels, and bladder. It sometimes attacks the lungs, producing irritation of the bronchial mucous membrane, with cough and spitting of blood, and occasionally gives rise to pulmonary apoplexy. It is evident that pulmonic cases of this nature, originating in a scorbutic diathesis produced by confined air, damp lodging, and a salt diet, will require a treatment peculiar to themselves, both during the attack and during convalescence.

The last source of pulmonary irritation, to which I shall direct your attention, is that which proceeds from scrofula. You all know that scrofula has a tendency to attack every tissue in the body, but you may not perhaps be aware that it may affect those tissues in very different ways, and that scrofulous irritation may manifest itself in various forms, from the most trifling and transitory to the most extensive and permanent. I recollect a case I attended with Dr. Jacob, in which this fact struck me very forcibly. A fine boy,

of high complexion, precocious intellect, and other marks of the scrofulous diathesis, got an attack of scrofulous ophthalmia of an intense character, and it required all the skill and ingenuity of Dr. Jacob to save him from blindness. During the period of our attendance, his brother (who was also of a strumous habit) began to complain of parts of his arm being sometimes a little sore. This circumstance attracted my attention, and on examination I found that several circular diffused swellings, of various sizes, often equalling half a crown in diameter, had successively appeared on different parts of his extremities and body. They evidently depended on inflammation of the sub-cutaneous cellular tissue, and exhibited a remarkable example of a most transitory local affection, produced by a constitutional cause — for these swellings arose, arrived at their acmé, and subsided in the space of ten or twelve hours; they constituted, in truth, the first efforts of the scrofulous diathesis to localise itself, and, after a few weeks' continuance, they were replaced by distinct and *fixed* scrofulous inflammation of the metatarsal bones.

Here was a very curious and instructive fact. A boy, evidently of a scrofulous diathesis, has circumscribed tumours, which arise, come to maturity of irritation, and subside in the course of a few hours. In some weeks afterwards, scrofulous irritation, in a decided and permanent form, fixes itself in the foot, producing inflammation and ulceration. From this it may be inferred that scrofula (for in this case I am firmly convinced these tumours were connected with strumous diathesis) may attack parts not only in its more permanent and destructive forms, but also in a manner so trifling and so transitory as to subside in a few hours, and leave no trace of its existence. The inferences deducible from this fact are numerous and important; for if scrofula may thus produce an acute and transitory inflammation of the sub-cutaneous cellular tissue, surely it may occasionally give rise to somewhat similar affections of internal organs — as the bowels, the lungs, etc. — and thus may occasion an acute bronchitis, a pneumonia, or an inflammation of the mucous membrane of the intestines, totally independent of the operation of cold, or the usual causes of such affections. It has been too much the custom to refer merely chronic and fixed local inflammations to the agency of constitutional causes. The example before us proves that even the most transitory may have this origin.\*

Scrofulous irritation may affect either the lining membrane or the parenchyma of the lung — giving rise in the one case to scrofulous bronchitis, in the other to scrofulous pneumonia; two affections which may exist separately or combined, and either of which may prove fatal, with or without the development of tubercles in the lungs. Tubercles have, as I have elsewhere proved, too exclu-

\* [There is no doubt of this; but we cannot think that it is the custom to neglect this connection of acute disease with chronic cachexia. — *Ed.*]

sively engrossed the attention of those who have investigated the pathology of phthisis; they are a very frequent product of the scrofulous diathesis, but the scrofulous bronchitis and scrofulous pneumonia are still more frequent and more important, and do not, as is falsely supposed, depend upon the presence of tubercles in the lungs. The pneumonia, the bronchitis, and the tubercles, where they occur together, are all produced by one common cause—scrofula. Of this more hereafter.\*

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### LECTURE III.

**Sleeplessness**—Sleeplessness from anxiety, grief, etc.—Case of jaundice accompanied by sleeplessness; treatment—Remarks on purgative mixtures—on the proper time for administering opiates—Sleeplessness in delirium tremens—Chronic variety of delirium tremens; treatment—Sleeplessness in fever; case—Failure of different modes of treatment—Use of opiate injections—Delirium traumaticum—Constitutional irritation from blisters; treatment—Sleeplessness in hypochondriacs and hysterical females—On the use and abuse of cold applications to the head.

Two cases which have been recently under treatment in this hospital demand your particular attention,—the man who has been labouring under a severe attack of jaundice, and the boy who is recovering from fever. A remarkable symptom in both of these patients, and which must have repeatedly attracted your notice, was a total privation of sleep. In the former case the sleeplessness continued for a week, in the latter for nine or ten nights.

Sleeplessness is a very curious result of disease. It accompanies certain morbid conditions of the system brought on by actual disease, or by grief, care, and various other forms of mental disturbance, continues to harass the unhappy sufferer night after night, and frequently resists the most powerful and decided narcotics. I do not intend to enter into any inquiry respecting the different states of the constitution in which it occurs; my purpose is merely to offer a few practical remarks on the more obvious and striking examples, with the view of illustrating the cases to which I have directed your attention.

There is a form of sleeplessness which is frequently the precursor of insanity, and which has been well described by my friend Dr. Adair Crawford. The watchfulness in such cases is accompanied by the well known symptoms of incipient mental derangement, and its treatment is therefore inseparably connected with that usually resorted to in cases of threatened insanity, and embraces the employment of means moral as well as physical. Of these it is not my intention to speak; I may observe, however, that Dr. Crawford has found opium, gradually increased to very large and frequently repeated doses so as to produce sleep, the best remedy.

\* [A most valuable practical remark, but susceptible of more extended application. The acute inflammations are rarely very violent, but generally sub-acute and prolonged.—*Ed.*]

In the case of jaundice, the patient passed several nights without any sleep. He was just beginning to recover from the jaundice when this new symptom appeared, and I directed your attention particularly to the circumstance, because every manifestation of nervous derangement connected with jaundice should be carefully watched. It frequently happens that jaundiced patients sleep too much, and in some cases the disease is accompanied by convulsions, succeeded by coma, most alarming symptoms, and almost invariably the harbinger of a fatal termination. Dr. Marsh was the first who directed our attention to the great fatality of those cases of jaundice in which convulsions occur; I have seen but one instance of recovery.\* It was in the case of a gentleman labouring under icterus, very considerable hepatitis, with enlargement of the liver and anasarca, with ascites. He was treated by Dr. Osborne and myself, and had at least a dozen long and violent convulsive paroxysms, ending in coma, succeeded by temporary forgetfulness and fatuity. Repeated leeching of the right hypochondrium, active purgation, and mercurialisation of the system removed all the symptoms of disease, and he slowly but perfectly recovered. A very able and original writer, Dr. Griffin, of Limerick, has detailed the particulars of some interesting cases of this nature in the *Dublin Medical Journal*. You perceive, therefore, that in jaundice every thing denoting an unusual state of the nervous system, whether it be too much sleep or too little, demands your attention.

In this man's case the jaundice was the result of an attack of hepatitis. We treated it with leeches, blisters, and the use of mercury, and in the course of a few days the stools became copiously tinged with bile, and symptoms of improving health appeared. At this stage, the dejections being bilious, but the jaundice still remaining, he began to exhibit symptoms of restlessness and nervous irritability, and finally became perfectly sleepless. Here, gentlemen, we had to deal with a new symptom, extremely harassing to the patient, and likely to react unfavourably on the original disease. As a preliminary step I determined to evacuate the bowels, and for this purpose I prescribed a purgative draught, consisting of five ounces of infusion of senna, half an ounce of sulphate of magnesia, a dram of tincture of senna, and a scruple of electuary of scammony. My object was to purge briskly, and then give a full narcotic. In all cases of jaundice depending on hepatic derangement, after you have succeeded in producing bilious evacuations, you should never omit prescribing an active aperient every second or third day for the space of ten days or a fortnight, with the view of carrying off the remains of the disease, so as to prevent the occurrence of a relapse. Hence you will find such cases very much improved by the use of Cheltenham water, taken every day for three or four weeks *after the reappearance of a bilious tinge in the*

\* [Even stupor is a very bad symptom, but it becomes more dangerous if convulsions should occur. The same remarks apply to the brain symptoms of renal disease. — *Ed.*]

*alvine discharges.* The stimulus of the purgative causes an increased flow of bile into the intestines, which removes the hepatic congestion, and carries off what is popularly termed the dregs of the disease, and promotes a rapid and complete recovery. It is a simple but successful practice, and I would advise you never to omit its employment in cases of this description.

With respect to purgative mixtures, I may observe, that you should prescribe a larger quantity of the infusion of senna than is generally ordered, if you wish to secure its certain and decided operation on the intestines. Hospital nurses, who reason from facts and experience, know this, and when directed to give a senna draught they always give a small teacupful. They administer from four to six ounces at a time, and I have observed that in this way the action of the medicine is more certain, and the benefit derived from it more extensive. I am convinced that the usual mode of giving this valuable purgative in private practice is bad; the quantity given is too small, and consequently it is necessary to repeat the dose several times, a mode of proceeding apt to occasion much nausea and griping: I would therefore recommend a quantity varying from three to six ounces, to be administered in all cases where the patient's condition will admit of free purging. A most accurate observer of the effects of medicines, Mr. Kirby, is in the habit of ordering purgative mixtures in chronic cases to be taken at bed-time, and not, as is usually done, in the morning. He asserts that their action is milder and less irritating to the bowels when the patient lies in bed and is asleep until the period of their operation, than if he were up and about.

After the purgative had produced four copious discharges, I prescribed eight minims of black drop, to be taken at a late hour in the evening. Whenever I give opiates to procure sleep, I always observe the rule laid down by Dr. M'Bride (a celebrated physician of this city), to select the period at which nature usually brings on sleep, and which varies according to circumstances and the habits of the patient. Whenever you have to deal with watchfulness in patients labouring under morbid states of the constitution, as, for instance, hectic, inquire when the tendency to sleep usually occurs, and administer your narcotic about an hour or two before its occurrence. It is between three and five o'clock in the morning that the inclination to sleep is strongest; it is about this time that sentinels are most apt to slumber at their post, and consequently attacks upon camps or cities, made with the intention of affecting a surprise, are usually undertaken about this period of the morning. How well marked is the periodic tendency to sleep at this hour in all patients labouring under hectic fever produced by whatever cause. How often do we hear the poor sufferer complain of restlessly tossing about in his bed until three or four o'clock in the morning, when at last sleep, welcome although uneasy, for a few ours separates the patient from his pains. If given at an early hour in the evening, the effect of the opiate is not coincident with

this periodic attempt of the constitution, and it fails in producing sleep: but if exhibited at a late hour, it begins to produce its sporadic effect at the very time when nature inclines the harassed sufferer to repose, and the result of these combined influences is a deep, tranquil, and refreshing sleep. By observing this simple rule, I have often succeeded in producing sleep in cases where various narcotics had not only failed, but even added considerably to the irritation and discomfort of the patient.

In cases of sleeplessness, where you have administered an opiate with effect, be careful to follow it up for some time, and do not rest satisfied with having given a momentary check to the current of morbid action. To arrest it completely, you must persevere in the same plan of treatment for a few days, until the tendency to sleep at a fixed hour becomes decidedly established. You must give an opiate the next night and the night after, and so on for five or six nights in succession; and where the watchfulness has been of an obstinate and persistent character, narcotics must be employed for a longer period and in undiminished doses. I do not allude here to the sleeplessness which accompanies confirmed hectic and other incurable diseases; such cases require a particular mode of treatment, and generally call for all the varied resources of medicine. But in those instances of watchfulness, which are frequently observed towards the termination of acute diseases, it is always necessary to repeat the opiate for some time after you have succeeded in giving a check to this symptom. You need not be afraid of giving successive opiates lest the patient should become accustomed to them and a bad habit be generated, for the rapid convalescence and renewed health, which are wonderfully promoted by securing a sound and refreshing sleep, will soon enable him to dispense with the use of opiates.

Another disease in which sleeplessness is a prominent symptom, is delirium tremens. We have had an example recently in our wards, and you have seen the means employed to overcome it. The patient came into hospital with symptoms of extreme nervous excitement and watchfulness, which had continued for some time, and were brought on, as is most commonly the case, by repeated fits of intoxication, succeeded by a pause of perfect sobriety — in Irishmen the result of necessity or accident. In this man you must have remarked the signal benefit which attended the use of a combination of tartar emetic and opium, and how rapidly the watchfulness disappeared. I shall not enter into the details at present, as I purpose to return to this subject on a future occasion.

There is, however, one form of nervous irritability, frequently observed in persons who are in the habit of drinking freely, but without running into excess, and presenting as it were a shadow of delirium tremens, on which I shall make a few remarks. This curious state of the nervous system is generally found to exist in men about the middle period of life, and who consume a larger

quantity of spirituous liquors than they are able to bear. Such persons, without suffering in appearance, or losing flesh, get into a chronic state of disturbed health, manifested by nausea, and even dry retching in the morning, loss of appetite, and impaired digestion; but in particular by a deranged and irritable state of the nervous system, and by watchfulness. This forms one of the most distressing symptoms, and the patient generally complains that he cannot get any sound and refreshing sleep, that he lays awake for hours together, and that when he slumbers his rest is disturbed by disagreeable dreams, or broken by slight noises. How are you to treat this affection? I can give you a valuable remedy for this deranged state of constitution — one which I have often tried, and which, from experience, I can strongly recommend. It is a mixture composed of tincture of columbo, quassia, gentian, and bark — say an ounce of each; and to this is added a grain, or even two, of morphia. A compound tincture, somewhat analogous to this, is much in use among military gentlemen, and others, who have resided for a considerable time in India, where, from the heat of the climate, and the prevalence of intemperate habits, the stomach becomes relaxed and the nervous system irritable, so as to represent, in a minor degree, the symptoms which characterise delirium tremens. You perceive I combine several tonics to form this mixture, because they are well known to produce a more beneficial effect when combined than when administered singly; and I add to these a narcotic, which has the property of allaying nervous excitement without derangement of the intestinal canal. The dose of this mixture is a teaspoonful three or four times a day, and the best time for taking it is about an hour before meals. It gradually removes the nausea and debility of stomach, lessens nervous irritability and watchfulness, and with a proper and well regulated diet, and attention to the state of the bowels, I have seen it produce excellent effects. In such persons much benefit is derived from the use of the tepid shower-bath.

Fever is another disease in which sleeplessness is a symptom, frequently of an unmanageable character, and pregnant with danger to the patient. You witnessed this in the case of the boy who lies in the small Fever Ward, next to the man who is at present labouring under general arthritis. This boy had fever of a mild description, and unattended with any bad symptoms. His case scarcely required any attention, and he had almost arrived at a state of convalescence without the aid of medicine, when he began to lose his rest, and absolutely became sleepless for several nights. I beg your attention to this case, for many reasons. In the first place, you have seen that we tried many remedies without success, and afterwards fortunately hit on one which answered our purpose completely. Let us examine the nature of the medicines prescribed, and our reasons for giving them.

In the first place we gave, as in the case of jaundice, an aperient, followed by a full dose of black drop. It failed in producing any

sleep; we repeated it a second and a third time, but without the slightest benefit. I then remarked to the class, that, as I had noticed the good effects resulting from a combination of tartar emetic and opium in the case of delirium tremens, where opium alone failed in procuring sleep, it would be proper to give this remedy a trial. I observed, at the same time, that I was convinced that the preparations of antimony have a distinct narcotic effect, and that I had seen patients in fever whose watchfulness had been removed by antimony given in the form of tartar emetic or James's powder. I said it was my firm impression that tartar emetic, along with its other effects, exerts a decided narcotic influence on the system, and that it is this which makes it so valuable a remedy in treating the sleeplessness of fever and delirium tremens. Hence I have been in the habit of giving tartar emetic combined with opium, in fever, and, I must add, with very great success. Our predecessors were much in the habit of using antimonial mixtures in the treatment of fever; and they did this because they knew, by experience, that these remedies worked well. It is at present too much the fashion to decry their practice, and in this instance, I think, with very little justice.

In this boy's case, however, the combination of tartar emetic and opium did not succeed in producing sleep. Having thus failed in our first and second attempts, we had recourse to the liquor muriatis morphiæ — a preparation first brought into use by Dr. Christian, and which, in the form usually employed, is equal in strength to laudanum. It is an exceedingly valuable preparation for many reasons, and one which has the strongest claims to your notice. Being of the same strength as laudanum, it saves the trouble of learning and remembering new doses, and, in addition to this, it possesses the more important advantages of inducing sleep with more certainty, and not acting as an astringent on the bowels, or affecting the head so frequently as laudanum. You observe that I say *so frequently*; I do so because cases now and then occur in which even moderate doses of the liquor of the muriate of morphia produce quite as much headache as laudanum. I prescribed the former in doses of fifteen drops every six hours, so as to give sixty drops in the day, and continued this practice for two days, but without the slightest effect. Here you see three modes of inducing sleep completely failed. The boy remained for a day without taking any medicine, and then we made another attempt, which was more successful. We first prescribed a purgative enema, and after this had operated he was ordered an opiate injection, consisting of four ounces of mucilage of starch and half a dram of laudanum. He fell asleep shortly after using the opiate injection, and did not awake until the next morning. The following night the opiate was repeated in the same form, and with equal success; convalescence went on rapidly, and the boy's health is now quite re-established.

Here, then, is a singular fact attested by this case, that opiates in

the form of injection will succeed in producing sleep, where they have completely failed when administered even in large and repeated doses by the mouth. Baron Dupuytren was the first who made this important observation, and proved that narcotics applied to the mucous surface of the rectum exercise a powerful influence on the nervous system, always equal, and very often superior, to the effect produced by taking them into the stomach. He maintains that, in *delirium traumaticum* and *delirium tremens*, a certain quantity of opium, when prescribed in the form of enema, will act with more decided effect in allaying nervous excitement than the same, or even a larger quantity, when taken by the mouth. I have no hesitation in giving full credit to this assertion, as the results of my experience tend strongly to confirm its truth. I have, not long since, published, in the *Dublin Med. Journal*, the case of a patient in Sir P. Dun's Hospital, who was reduced to the last stage of debility and emaciation from the combined effects of mercury and syphilis. The torture which this man endured from nocturnal pains, and a total deprivation of sleep, was such that he swallowed enormous doses of opium; in fact, he had, previously to his admission into Sir P. Dun's Hospital, exhausted all his means in purchasing opium. While in hospital, he used to take 150 drops of black drop in the course of a day, and yet, notwithstanding these excessive doses, he could only get a few minutes of unrefreshing slumber. After some time I changed the plan of treatment, and had the black drop administered in the form of enema. It succeeded in producing a decided soporific effect, and in a short time he was able to enjoy a sufficient quantity of repose, from taking only one tenth of the quantity used by the mouth. I have also, in the same paper, adverted to the case of a medical gentleman who laboured under an affection of his joints, which was accompanied by spasms of the limbs and most excruciating pains. His agony was so intense that he used to swallow grain after grain of opium, until he had taken to the amount of thirty or forty grains, with the view of procuring some alleviation of his sufferings. He was prevailed on to give up altogether the use of opium by the mouth, and employ it in the form of enema, which he did with the most striking advantage—the quantity which succeeded in giving relief in this way being scarcely the twentieth part of what he ordinarily used.

It is unnecessary for me to enter here into any discussion with respect to the nature and treatment of *delirium traumaticum*, and the sleeplessness which always accompanies it, as you will find this subject very ably treated in M. Dupuytren's works, and in a very instructive and elegant lecture delivered by Mr. Crampton (the surgeon-general) in this hospital, and published in the last volume of the *London Medical and Surgical Journal*. There is, however, one kind of sleeplessness, arising from irritation of the skin produced by blisters, which frequently assumes a very serious character, and on which it may be necessary to offer a few observ-

ations, as the subject has not been noticed sufficiently by practical writers. Trifling as the irritation resulting from a blister may seem, yet, under certain circumstances, it is a symptom of highly dangerous aspect, and becomes a source of just alarm. I have witnessed the loss of some lives from this cause, and many patients have, to my knowledge, been rescued from impending danger, by an early and proper share of attention being directed to its phenomena and treatment.

The bad effects on the nervous system, occasionally produced by the application of blisters, are somewhat analogous to those which result from wounds and other external injuries, and to be accounted for on the same principle. Wounds and injuries sometimes make an impression on the nervous system, by no means proportioned to the importance of the injured organ to life, or to the extent of the mischief. An injury, produced by a body which strikes the sentient extremities of the nerves with great force, will sometimes produce very remarkable effects on the system. Thus, a musket-ball striking a limb may, without wounding any great artery or nerve, or destroying any part of importance to life, produce a train of nervous symptoms of an extraordinary character. The person, without feeling much pain, and scarcely knowing that he has been wounded, without being terrified or having his imagination excited by any apprehended dangers, turns pale, gets a tendency to faint, and sometimes actually dies from the impression made on the nervous system. In the same way an external injury reacting on the nerves may bring on high mental excitement, delirium, and a total privation of sleep, as we exemplified in *delirium traumaticum*. I mention this with the view of establishing the proposition, that impressions made on the sentient extremities of the nerves are sometimes reflected on the nervous centres, producing the most alarming effects. In this way we can understand how the irritation of blisters may produce sleeplessness, mental aberration, and a train of symptoms analogous to those which characterise *delirium traumaticum*.

The delirium and sleeplessness arising from the irritation of blisters is by no means an uncommon disease. I have seen many examples of it in private practice, and I am anxious that you should be acquainted with its nature and treatment. It is generally met with in the case of children, in whom the cutaneous surface is extremely tender and irritable. I could relate several instances in which I have been called on to visit children labouring under fever, where symptoms of high nervous excitement were present, and where I found the little patients delirious, screaming, and perfectly sleepless from this cause. I have found this alarming affection generally occurring at an advanced stage of fever, and exhibiting a train of symptoms which closely resemble hydrocephalus. I have observed that after the application of a blister to relieve some suspected cerebral or abdominal or thoracic affection, jactitation, restlessness, constant application of the hand to the head, and deli-

rium have appeared, and that these symptoms had been mistaken for incipient cerebritis or hydrocephalus, and treated with leeches and purgatives. When the blister has been applied to the nape of the neck, the soreness and irritation of the skin on that part *cause the child to roll its head from side to side on the pillow, with that peculiar motion and scream supposed to prove to a demonstration the existence of hydrocephalus.* I have learned also, that the above measures, so far from giving relief, have only tended to produce an exacerbation of the disease, and that the medical attendant has given up the case in despair. Now, gentlemen, if called to such a case what should be your practice? In four cases of this kind I gave my opinion frankly to the medical attendant, and told him he was pursuing a wrong course, that the disease was analogous to delirium traumaticum, and not to be treated by leeches or purgatives, and least of all by blisters. I observed to him that these symptoms had made their appearance shortly after the child had been blistered for suspected disease of the belly, or head, or chest; and that it was useless to attempt to remove the disease by leeches, or purgatives, or blisters. The remedy I always proposed was opium, and it was acknowledged in four or five cases, that this remedy had succeeded not merely in relieving the existing symptoms, but in saving the patient's life. In such cases, particularly in young children, the opium must be given in small but frequently repeated doses, so as to ensure its energetic but safe action, and the greatest care must be taken to soothe the irritated portion of the skin by ointments, poultices, etc., while *unwearied diligence must be bestowed upon the task of preventing the child from scratching the blistered surface.* To effect this the child's hands must be muffled in appropriate gloves, and must be secured in the sleeves of a shirt made for the purpose.

I beg your attention still further to this subject of sleeplessness and delirium. I wish to mention the case of a gentleman who was a pupil of mine. This gentleman studied hard, attended lectures regularly, and was constantly in the dissecting room. While thus occupied, he happened to wound one of his toes in paring a corn, and afterwards wore a tight shoe on the injured foot. A small imperfect abscess formed in the situation of the corn, which was opened by one of his fellow-students; the incision gave very great pain, and was not followed by any discharge of matter. Next day he was feverish, and the lymphatics of the injured limb became extensively engaged, the inflammation ascending towards the glands of the groin and having a tendency to form a chain of insulated patches in different parts of the leg and thigh along the course of the lymphatics. This you will generally find to be the case in inflammatory affections of the lymphatics; the inflammation is seldom continuous, but, in the majority of cases, is developed at certain insulated points, where small diffuse suppurations form very rapidly. After a few days, this young gentleman's fever increased to an alarming height, he became completely sleepless,

and had incessant delirium. He was purged briskly, leeched extensively and repeatedly, his head shaved, and cold applications so constantly applied, that he appeared half drowned and collapsed. Notwithstanding this very active treatment not the slightest relief was obtained; neither were the symptoms mitigated by incisions made in the inflamed patches for the purpose of evacuating matter; the sleeplessness continued, and the delirium was as wild as ever. I saw him on the seventh or eighth day, when all antiphlogistic measures had failed, and his friends were quite in despair. On being asked my opinion, I stated that I looked upon the case as one of delirium, not proceeding from any determination to the head or inflammation of the brain, but depending on a cause analogous to those which produced *delirium traumaticum*, and that instead of antiphlogistics I would recommend a large dose of opium and some porter to be immediately given. Mr. Cusack, who visited the patient after me, concurred in this view, and a full opiate was administered in repeated doses. It succeeded in producing sleep and tranquillising the nervous excitement. I may here observe that a few days afterwards this gentleman had a return of the symptoms of cerebral disturbance with sleeplessness, in consequence of omitting his opiate, and that the opiate and porter were again administered, and again succeeded in removing the delirium and watchfulness. By perseverance in the use of the same means, the disease was completely removed, and convalescence established.

The last kind of sleeplessness to which I shall direct your attention, is that which is frequently met with in persons of a nervous and irritable disposition, in hypochondriacs and hysterical females. You will find such persons, although of active habits and with tolerable appetites, complaining of a total privation of their natural rest, and it is astonishing to think how long they may continue subject to this harassing watchfulness. I have frequently observed this affection among females of nervous habit, who possessed strong feelings of attachment to the interest and welfare of their families, and who were remarkable for an exemplary and over anxious discharge of their domestic duties. It is also very often met with in the upper classes of life, where the susceptibility to nervous excitement is morbidly increased by fashionable habits. I shall not enter into the various moral causes which tend to produce this state of the nervous system, and will content myself for the present with giving you some hints for the treatment of this obscure affection. As yet I have not any distinct and accurate notions of the disease, and can only guess at the treatment; but this much I may state, that such cases are not to be cured by the means which I have already detailed. If they are to be cured by any means, I think it is by antispasmodics, and remedies which have a gentle stimulant, and, if I may so express myself, alterative effect on the nervous system. I have cured two cases of this kind by musk and assafetida, where every other remedy had failed. To one of these I was called by my friend, Dr. Neason Adams; the patient was a lady of delicate

constitution and hysterical habit; she was emaciated, and suffered from a total loss of rest, but had no other disease. All kinds of narcotics had been tried unsuccessfully, and opium in all its forms had failed in procuring sleep. I advised the use of musk in doses of a grain every second hour, and this means proved eminently successful. In another case I succeeded by administering the same remedy in combination with assafœtida. I have also remarked that assafœtida alone, given in doses of two or three grains three times a day, has very considerable effect in calming nervous irritation of this description, and restoring the patient to the enjoyment of more prolonged and refreshing sleep. In all such cases the physician must be most careful to have the appearance of not thinking the loss of sleep as a matter of much consequence, and the family of the patient must be directed to speak as little about the matter in his presence as possible; — nay, so powerful is the operation of moral impressions, that in one case, which I attended along with Mr. Halahan, I succeeded in procuring sleep by ordering a musk pill to be given every second hour night and day, and by desiring the patient to be awakened, should she be asleep, at the time the pill was to be taken. I laid great stress on the importance of so proceeding, and thereby produced so strong an effect on the patient's mind, and inspired so great a confidence in the efficacy of the medicine, that she went to bed, not so much afraid of lying awake as afraid of being asleep at the hours when she ought to take a pill. The idea which had hitherto fixedly occupied her mind was displaced by a new impression, and relief was obtained the very first night.

In affections of the head occurring in acute diseases, and attended with raving and loss of rest, it is a very usual practice to direct the application of cold lotions to the shaved scalp.

Permit me, gentlemen, to make a few remarks upon this important subject. I wish I could make myself well understood on this point, for I have seldom met with any person who seemed to bear in mind the true principle upon which cold is applied as a means of repressing local heat. In cases of determination of blood to the head occurring in fever, the common practice is to have the head shaved and cold lotions applied. Enter the room of a patient who is using cold applications, and you will observe the process conducted with great apparent nicety; the head is accurately shaved and carefully observed with folds of linen wet with a lotion to which spirit of rosemary or some odoriferous tincture has communicated an agreeable and refreshing smell; but when you come to examine the patient, you find his head smoking and the heat of his scalp increased. The nurse applies the lotion once every half hour, or perhaps not so often; indeed, she seldom repeats the application until her notice is attracted by the steam rising from the patient's head, or until she herself, awaking from a comfortable sleep, and going over to examine the state of the patient's head, find the folds of linen which cover it as hot and

dry as if they had been hung before a fire. Whether applied to reduce local inflammation in any part of the body, or to cool the scalp in determination to the head, cold lotions as ordinarily employed do infinitely more harm than good. The cold is applied at distant intervals, its effect soon ceases, and reaction constantly takes place, leaving the part as hot or even hotter than it was before.

If you put your hand into snow for a few moments and then take it out, it quickly resumes its natural heat; and if you repeat this at considerable intervals, so as to give time for reaction to occur, the vessels assume a more energetic action, and it becomes hot and burning. If you continue to keep it in the snow for a long time, its heat becomes completely exhausted, reaction does not take place until after a considerable period, and very slowly, and the hand remains at a very low temperature for a good while. Bear this in mind, for it will direct you in the application of cold to reduce local heat. If cold applications be used at such intervals as to allow the scalp to react and resume its heat, rely upon it, it is much better to forbid them altogether. Where you wish to apply cold with effect, let it be done by relays of folded linen, wet with any frigorific mixture, and repeatedly applied to the scalp so as to leave no smoking, or, what is much better, get three or four bladders, put into each a quantity of pounded ice, and apply one over the crown of the head, one on each side, and lay one on the pillow for the back of the head to rest on.

There is a vast difference between a thing being done and its being well done: so it is with regard to cold lotions; so difficult is it to insure their proper application, that I have entirely given them up in hospital practice, and rarely order them in private. I have been induced to abandon them in consequence of witnessing so many instances in which my directions were neglected, and consequently the cerebral congestion was augmented by their mal-application. Another serious inconvenience frequently arises from their use when applied in a slovenly manner, which is the danger of cold arising from the pillow and bed-clothes being wetted.

It is a curious fact that the head is the only one of the three cavities with respect to which long established custom has laid down the maxim, that when its contents are inflamed we may cool the surface over it, while in inflammatory affections of the thoracic or abdominal viscera this practice is avoided as dangerous and inapplicable. Latterly, however, some medical men have been inclined to question the grounds on which cold applications have been rejected in the two latter cases, and some have even declared that they have used ice poultices in inflammations of the chest and belly with great success and perfect safety.\* I am not as yet pre-

\* [In gastritis of a violent character, with intense heat and frequent vomiting, this is a most excellent practice, and fully borne out by our own experience; nor have we ever seen any inconvenience result from it. A bladder of ice may be applied over the epigastrium and removed as soon as it melts, but if the skin

pared to adopt this practice, although I must confess that a review of the subject might incline me to give up my prejudices on this point. It is certainly but reasonable to think that what is true of the one may be also true of the other, and that the application of cold to the head and heat to the chest and belly has nothing in its favour beyond mere custom. It should be recollected, however, that the head and face are more accustomed to cold than the chest and belly, and hence are less liable to any mischief likely to arise from its application in an intense degree. Still I am inclined to think that there is much prejudice connected with the practice of applying cold to the head; and I have very little doubt that if the matter was properly investigated, and a number of experiments made, it would lead to the abandonment of cold applications in most inflammatory diseases of the brain. In fevers, I can say positively that in the majority of cases they are positively injurious, *as usually applied*; sponging the bare scalp with tepid or warm vinegar and water, or *even frequently repeated steeping of the head and temples*, will often succeed much better in abating the headache and restlessness of fever than any cold applications whatsoever. In 1832, a violent influenza, accompanied by most distressing headache, attacked thousands in Dublin; this intense pain in the head was relieved by nothing so effectually as by diligent steeping of the temples, forehead, occiput, and nape of the neck, *with water as hot as could be borne*.

I do not speak here of the application of cold to the head for the purpose of relieving local heat and inflammation, but to produce an effect on the whole system. Cold thus applied is of decided and unequivocal value. You are aware that in cases of fever accompanied by symptoms of high mental excitement and great heat of skin, the use of cold dashing has produced the most extraordinary effects. Again, if a patient has taken too large a dose of prussic acid or any other narcotic, the best mode of rousing him is by pouring water on his face or chest from a height. In Turkey, if a person happens to fall asleep in the neighbourhood of a poppy-field, and the wind blows over it towards him, he becomes gradually narcotised, and would die, if the country-people, who are well acquainted with this circumstance, did not bring him to the next well or stream, and empty pitcher after pitcher on his face and body. This occurred to my friend, Dr. Oppenheim, during his residence in Turkey, and he owes his life to this simple but effectual treatment.

To conclude, gentlemen, I may observe that sleeplessness in a chronic form is often produced by dyspepsia, and can only be relieved by the means suited to indigestion. Here it is that small

should become cool, or the patient chilly, it should be immediately laid aside. In sub-acute cases we have never seen the remedy employed, nor do we think advisable unless in rare exceptional cases. We have not resorted to cold applications in thoracic inflammations, because the sensation of heat and burning is rarely felt, and the patient is much more soothed by warm applications than in inflammations of the abdominal viscera.—*Ed.*]

oses of blue pill and tonic purgatives are of infinite service, combined with change of air, of scene, and an appropriate diet. In many females, sleeplessness is combined with menstrual irregularity, and can only be cured by means calculated to invigorate the health and restore the catamenial discharge to its natural periods and quantity, for the nervous system suffers equally whether they be suppressed or over abundant. It is singular how long sleeplessness often continues in chlorosis without inducing those serious consequences that are produced by this symptom in other morbid states of the system. In such cases much is sometimes accomplished by means of the common preparations of morphia, or by the use of Hoffman's liquor (*liquor æthereus oleosus*), camphor, and other medicines that act upon the nervous system. It must be confessed, however, that these and every other expedient to obtain sleep often fail in chlorotic and hysterical females, in whom relief is only obtained by a gradual improvement of the general health and menstrual function.

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## LECTURE IV.

### GANGRENE AND PLEURITIS.

I HAVE here the lungs of a patient who died yesterday in the fever ward, and to whose case I have frequently directed your attention. They present some pathological phenomena of considerable interest, and I would advise you to examine them carefully after lecture.

The patient, who was advanced in life and of a feeble constitution, had been ill for a week before his admission, with symptoms of dyspnoea, cough, and pain in the left side, which appeared shortly after his recovery from an attack of fever. On examining him the morning after his admission, we found the interior part of the left lung dull on percussion, the dulness extending much higher up posteriorly and anteriorly. On applying the stethoscope, we observed that, over a space about the size of two palms, no sound, morbid or otherwise, could be heard; but above the line which bounded this space there were crepitating râles and bronchial respiration. We had, therefore, a twofold affection of the lung, pleuritis, as indicated by the pain in the side, dulness on percussion, and absence of all sound over a certain portion of the chest; and pneumonia, as indicated by cough and expectoration of viscid sputa, tinged with blood, dulness of sound on percussion, bronchial respiration, and crepitating râles. It is unnecessary for me to recapitulate all his symptoms, as I have, while visiting the wards, mentioned them in detail, and I shall merely state, that our examination showed that this man, in the first place, was labouring under

pleuritis, and that it was of that kind which is called dry pleurisy, and where there is no tendency to considerable effusion; and, in the next place, that he had pneumonia of the inferior lobe of the left lung, extending up into the middle lobe posteriorly. You will recollect that, at the time of our examination, I marked on his skin with a pen the extent of the pleuritic inflammation as well as of the pneumonia, and you will find, by examining this lung, that my diagnosis was correct. You will observe the pleura presenting, over its inferior part, laterally and posteriorly, an effusion of lymph, with a very small quantity of sero-purulent fluid; and here is the seat of the pneumonia, which occupied precisely the portion I pointed out and no more.

With respect to treatment, it was antiphlogistic, pushed as far as the advanced stage of the disease and the age and debility of the patient permitted. He was leeched and blistered, and this was immediately followed up by the use of calomel and opium, and the application of mercurial ointment over the affected portion of the chest. This treatment appeared to check the disease and stop the progress of disorganisation in the lung; at least it certainly arrested the pleuritis. The pulse became more tranquil, and what encouraged us to entertain some slight hopes was, that the difficulty of breathing subsided, and respiration became less frequent, although it was never reduced to anything like a natural standard. I have already told you, that in studying acute and chronic affections of the chest, the two chief symptoms to be attended to, are the number of respirations which occur in a minute, and the amount of dyspnoea complained of by the patient. Here, though the respirations sank from forty to thirty, still they were nearly double the natural frequency; and this, coupled with the age and debility of the patient, forbade us to hope for a cure. Though the pulse had become more tranquil, and the bloody expectoration had ceased, though dyspnoea was no longer complained of, and the frequency of respiration had become reduced, still the man's countenance exhibited strong marks of suffering and debility, and the stethoscope showed that the disease still continued, and there was no tendency to resolution in the affected lung. Here the stethoscope was of great value. A person ignorant of its use, observing the tranquil state of the pulse, the diminution in the frequency of respiration and the cessation of dyspnoea, might be led to believe that the man was getting better, and to pronounce that the period of convalescence was near. But the stethoscope told us that the hepatisation of the lung had no tendency to resolution, and when we observed, after a week, that it was still undiminished in extent, we were led to form an unfavourable prognosis. We knew that matters could not remain long in this state; we knew that the disorganised lung acted as an irritant tending to keep up disease, and that the man was every moment liable to a fresh attack of inflammation.

In the mean time the patient caught a fresh cold, from being exposed to the thorough air of our too well ventilated wards. This

fell on his larynx, producing hoarseness, stridulous breathing, and copious expectoration. When an old person, reduced by some previous disease, catches cold, and gets, in consequence, a sudden and remarkable hoarseness, so that he can only speak in whispers; when, in addition to this, he has cough, stridulous breathing, and copious muco-purulent expectoration, you may be sure that the case is a bad one, and the patient in most imminent danger. Inflammation of the larynx in children is, you all know, a violent disease, it terminates in an effusion of lymph which, if not prevented, or remedied, by the most prompt and decided measures, too often produces fatal obstruction to the entrance of air, and death from asphyxia. In the adult, laryngitis does not, except in a very few instances, cause an effusion of lymph; still it is a severe disease, and well calculated to excite alarm. *In the aged* it is accompanied by considerable fever, and, what you would suppose likely to give relief, copious expectoration, evidently derived from the larynx itself; and yet I do not recollect that I have ever seen a case of this kind that did not terminate fatally. I have very recently visited a case of this description, which occurred in the person of an eminent country practitioner, who had just come up to Dublin. He got an attack of cold, followed by hoarseness, which went on for two or three days without being attended to, until one evening he suddenly became alarmingly ill, and was obliged to send for his friend, Dr. Evanson, who prescribed and called on me the next day. I found him labouring under stridulous breathing, constant laryngeal cough, prostration of strength, and enormous muco-purulent expectoration. His pulse was very rapid, he complained much of oppression of the chest, and died the following night, more with symptoms of exhaustion than of asphyxia.

The symptoms of laryngitis, which arose thus suddenly in our patient, were quickly succeeded by others. On Saturday morning we found him much worse, his countenance was sunk and livid, and his breath had become extremely fetid. His expectoration also exhibited a very remarkable change; it was greenish, ichorous, and had a most intolerable fetor. He now began to manifest symptoms of awful prostration, his distress of respiration became intense, his eyes fixed, his extremities cold, and he expired in about forty hours from the commencement of the attack.

Here, gentlemen, a man, after fever, gets an attack of pleuro-pneumonia, this is relieved to a certain extent by treatment, but the hepatisation remains unresolved. At the end of three weeks he gets an attack of laryngitis; in addition to this, gangrene seizes on the diseased lung, and he sinks with great rapidity. Where gangrene attacks the limbs it may creep on slowly, and life may be prolonged for a considerable time, but when it fixes on internal organs its course is rapid, and generally proves fatal in a few days. In the lung, unless the patient's constitution is unimpaired and the disease limited, it will terminate quickly in death, and you have seen that, in this case, it only lasted from Saturday until Monday

morning, that is to say about forty hours. After the acute stage of pneumonia had passed away, as denoted by the absence of fever and bloody sputa, and diminution of dyspncea, and frequency of respiration, the case assumes a chronic character, which continues for nearly a fortnight, and then a new order of symptoms appears, manifested by fetid breath and expectoration, sudden prostration of strength, Hippocratic face, and cold extremities. Those who have watched this case must have been struck with these three remarkable stages: the first stage of inflammation, the succeeding one of chronic disease, and the termination in gangrene. It is not usual to find gangrene of the lung supervening on inflammation which is arrived at the chronic stage; it is most commonly the result of acute inflammation of intense character, and comes on at a very early period of the disease.

How we are to account for this sudden supervention of gangrene? There was nothing in the nature of the pneumonic inflammation to dispose it to terminate in this way. It had lasted for three weeks, and had arrived at a stage in which inflammation very rarely assumes the gangrenous character. To what, then, are we to attribute it? Partly to the debility of the man's constitution, and partly to an erysipelatous tendency in the air, which is now very prevalent. Except there was something to dispose the lung to gangrenous disease, as an enfeebled habit and a vitiated quality of atmosphere, we could not, under the existing circumstances, have expected such a termination. That this view of the subject is correct, is shown by the simultaneous occurrence of gangrene in another part, which had not been previously diseased, or subject to inflammation, except shortly before the man's death,—I allude to the larynx. If you examine the larynx you will find the mucous membrane at the posterior surface, and where it invests the chordæ vocales, destroyed by gangrenous sloughing. You perceive, then, we had gangrene in the larynx and lung, simultaneously. The gangrene of the lung was not therefore attributable to the occurrence of local inflammation having a tendency to gangrene, but dependent upon a constitutional affection produced by debility and a vitiated state of atmosphere. If this man had chanced to get a wound on any part of his body, I have no doubt but that it would exhibit a gangrenous character, and, in the same way, if he happened to get inflammation of the bowels, it is most probable that this also would have ended in gangrene. I have frequently, in the advanced stage of fever, where the patient is much reduced, and where signs of a morbid condition of the fluids are present, seen gangrene occur simultaneously in various parts of the body. What I wish to impress on you is, that though the inflammation of the lung ended suddenly in gangrene, it was not in consequence of the inflammation having in itself any such tendency, but in consequence of a change produced in the man's constitution by atmospheric influence, and which was favoured by his advanced age and great debility.

The inference to be drawn from the sudden occurrence of gan-

grene in this case is, that it does not depend merely on violence of inflammation. At one time pathologists were inclined to believe that gangrene was invariably the result of excessive inflammation, or at least of inflammatory action disproportioned to the vitality of the parts attacked, and that it was possible to prevent any inflammation from ending in gangrene by prompt and active treatment. But there are certain states of the constitution which have a tendency to convert every form of inflammation into gangrene, and that wholly independent of the violence of the local inflammatory action. Thus, a person reduced by fever, small-pox, or malignant scarlatina, becomes liable to be attacked with gangrene in various parts of the body from the slightest causes. In all parts which are exposed to any degree of pressure, you will, under such circumstances, have gangrenous sores formed; and, even in parts where no degree of pressure has been exercised, sphacelus is not unfrequently produced, as we see in many cases of confluent small-pox, and in the mortification of the pudenda in female children, which sometimes occurs in bad measles. In such instances, gangrene is not preceded by symptoms of inflammatory action; and, in the present case, it is very probable that no inflammation of the lung, properly so called, preceded the gangrenous affection which terminated life.

Permit me now to direct your attention to the case of a man named T. Kelly, who lies in the upper fever ward, and has been under the care of Mr. Knott. He is at present labouring under an attack of pleuritis and pneumonia, each modifying the other—the pleuritis being here also of that nature which is, by contra-distinction, termed dry. A few particulars in this case demand our notice. In the first place, from looking at this man and examining his pulse, you would never suppose that he was labouring under a formidable disease. A careless observer, finding the pulse to be soft, regular, and only seventy-two in a minute—that respiration was tolerably free, and the skin cool—might here very easily overlook the true nature of the disease, and say this man has no fever, no inflammation of any internal organ. Yet a careful examination shows that the right lung and pleura are extensively engaged. In the next place, we find that the pleuro-pneumonia has attacked the upper part of the lung instead of the lower. Pneumonia has a great tendency to attack the lower and posterior parts of the lung; indeed, so frequently do we meet it in this situation, that we look upon its occurrence in the upper part of the lung as a rare exception to a general rule. The third point connected with this case is, that, though the patient is labouring under pleuritis and pneumonia, his blood does not exhibit the slightest symptom of being affected by this combination of violent inflammations. When drawn from the arm, it separated very imperfectly into crassamentum and serum, and there was no deposition of that buffy coat which has been so often noticed by our ancestors as occurring in pleuritis, and hence termed *crusta pleuritica*. Here, from observing that there was no

formation of coagulum — no cupped or buffed appearance in the blood, and that the pulse was soft and regular — some persons would have argued that no inflammation was present ; but how false and dangerous such a conclusion would be, any one may convince himself by making a careful stethoscopic examination. The fourth point (which was first observed by Mr. Knott) is, that there is a considerable disproportion in the size of the sides of the chest ; the right side measuring better than two inches and a half more than the left. Now, there must be some cause for this ; and as the man has pleuritis on this side, it would be natural to infer that there is a considerable effusion of fluid in the cavity of the pleura, and that the dilatation of the side is produced by empyema. There are some circumstances, however, in this case which forbid us to adopt such a conclusion. In the first place, this great increase of size in one side of the chest would indicate a very considerable effusion. By empyema, I do not mean the effusion of a quantity of lymph, which does not push back the lung more than a line, but an effusion of fluids of various densities, and in large quantity, exercising very considerable pressure on the lung, and pushing it back towards its root. There are two circumstances in this case which should be attended to ; first, the man is a labourer, and in such persons the chest, measured across the pectoral muscles, is always found to be on the right side half an inch, and sometimes nearly an inch, larger than it is on the left. This is accounted for by the increased development of the muscles of the right side from constant use. In the next place, we find that this man has not only pneumonia and pleuritis, but also a tendency to superficial inflammation occupying the parietes and integuments of the chest, as indicated by a feeling of pain and soreness in various regions of that side, but particularly at the lower part, where the sound is clear on percussion. Now, where the sound is clear on percussion, you are aware that no effusion of fluid exists. The fact is, that, in addition to pleuritis and pneumonia, the man is labouring under pleurodynia, with a tendency to inflammation in the superficial parts of the chest. Under these circumstances, we should not be surprised to find some oedema of the parts ; and here we have a second cause for the greater measurement of the right side of the chest.

These are the only points connected with this case to which I shall advert at present, except to mention that the treatment was obviously indicated to be antiphlogistic. You might perhaps think that in treating this man it was a matter of indifference whether you had recourse to tartar emetic, either alone or in combination with nitrate of potash, or to calomel and opium ; but you may lay it down as a rule now firmly established, that, in cases like this, the mercurial plan answers much better than tartar emetic. After bleeding this man, then, we gave him mercury in such doses as to affect his system as rapidly as possible, and we followed up our general means of depletion by the application of leeches, *which, in all inflammatory affections of the chest, are indicated in proportion*

*tion to the pain and tenderness of the chest complained of by the patient.* Indeed, something similar must guide us in judging how far we are likely to procure relief, *in cases of inflammation of any internal organ, by means of the application of leeches to the surface over the organ affected.* No good is ever obtained by their application, unless tenderness or soreness on pressure be distinctly observable, and the relief obtained is always proportioned to the diminution of this tenderness where it existed; where it does not exist, the application of leeches only leads to loss of time, and we must employ other remedies in such cases.

There is another symptom in this case which might deceive you into the belief that empyema is present; the motions of the right side of the chest are much more limited than those of the left. When you look at him stripped, you perceive an obvious difference between the respiratory motions on each side; the motions of the unaffected are free, and much more extensive than those of the diseased side. Now, generally speaking, this is a symptom most commonly observed in empyema and a few other diseases. It may also exist where there is extensive hepatisation of one lung, for, in proportion to the impossibility of air entering the diseased lung, will the motions of the corresponding side of the chest be diminished. How are we to account for it in this man's case? The pneumonia is not extensive enough to cause it, and we have no evidence of the existence of any effusion into the pleural sac sufficient to explain it. The only way we can account for it is by recollecting that the man has pleurodynia; and, as every attempt at dilating the chest gives him pain, he endeavours to control its motions on that side as much as he possibly can. This is a fact well worthy of notice. It exhibits to us a beautiful provision of nature, which enables a person, by an intense discharge of the respiratory function in one lung, to compensate himself for a limited and imperfect performance of it in that half of the chest where it is limited by pain, paralysis, or disorganisation.

As I am on the subject of pneumonia, it may be necessary to make a few remarks on some points connected with it, and first with respect to the expectoration. With the characters of true pneumonic sputa, I suppose, you are sufficiently acquainted; you had many opportunities of examining the expectoration of the patient who died of gangrene of the lung at the time he was labouring under acute pneumonia, and while hepatisation was still going on. But I wish to observe — and I beg you will impress this on your minds — that *there may be cases of extensive pneumonia without any expectoration from the commencement of the disease to the period of complete resolution.* A case occurred in this hospital, of a young woman, named Mary Nowlan, who had half one lung and the lower third of the other hepatised during a severe attack of pneumonia, and yet it was not accompanied at its commencement by expectoration; there was no expectoration during its continuance, and resolution went on, and the lung was restored

to its healthy condition without any expectoration. She remained in the hospital for two months, the lung being extensively engaged; and during this time she was carefully watched, but we never could discover anything like sputa from the beginning to the end of the disease. This is a very singular but instructive case. Another fact with regard to expectoration. A man may get an attack of pneumonia, and, in consequence of the rush of blood which accompanies the first access of inflammatory action in the lung, may have at the beginning some bloody expectoration, but after a day or two this subsides; and though the lung is extensively engaged, the patient may not have any expectoration whatever throughout the whole course of the disease up to the period of total resolution. I have seen this occurrence most distinctly marked in a case which I attended with Dr. Marsh. A gentleman, who had got an attack of acute pneumonia, had bloody expectoration for the first and second day, but on the third, when I saw him, it had ceased, and all expectoration continued absent for five weeks, at the end of which he completely recovered. He was an intelligent and scientific man — knew well what was the matter with him, and entertained the old notion that all inflammatory affections of the lungs resolve themselves by expectoration. Hence he looked day and night for its occurrence with considerable anxiety, but not the least sign of sputa appeared. In this case the hepatisation, which was very extensive, became completely resolved in the course of five weeks, and yet it is a singular fact that there was no expectoration whatever, from the commencement of resolution to its termination. Hence you may perceive, that in pneumonia the sputa may be absent from the beginning to the end of the disease; and that, though the hepatisation may be very extensive, still resolution will occur without the slightest expectoration. Again, inflammation may attack a considerable portion of the lung, and the patient may have bloody expectoration for the first two or three days, or during the stage of congestion; this may cease altogether, and the patient have no sign of sputa of any description up to the period of complete resolution. These are, no doubt, rare exceptions to the general law which regulates the course of pneumonic inflammation, in which we have sputa of one kind or other at every period of the disease; but they possess a considerable degree of interest, and it is of some importance to be acquainted with them.

Allow me to repeat here an observation I have already made. The lung becomes attacked by inflammation, this goes on to hepatisation, that is, a certain portion of the pulmonary tissue which had been before pervious, becomes impervious; instead of being a soft, elastic, crepitating, sponge-like body, it becomes solid, inelastic, and very like that organ from which this condition derives its name, the liver. One of the most curious things, the knowledge of which we have arrived at by the discovery of the stethoscope, is, that not only small, but even every extensive, portion of the lung may become thus solidified and altered in their texture, so that a

return to the normal condition would seem almost impossible, and yet we know that a person may have nearly two-thirds of one lung reduced to this state of solidification, and still become afterwards as healthy as ever. Now, if you read Laennec's admirable remarks on pneumonia, and other treatises on the same subject, you will find that the circumstances which indicate the resolution of pneumonia, are sputa of a certain character, and the reappearance of crepitus. I need not repeat here what I suppose you are all aware of, that crepitus commences before hepatisation, ceases on its appearance, and returns again when resolution take place. The latter kind is what has been termed by Laennec, *crepitus redux*. Nature accomplishes the resolution of pneumonia not only by absorption of those particles which the process of morbid action has deposited in the tissue of the lung, but by secretion into the air cells and minute bronchial tubes, and it is the presence of this secretion which gives rise to the crepitus redux. Now, the observations which I have made with respect to the total absence of expectoration in some cases of pneumonia, apply here also; for where all sputa are absent, where there is no expectoration from the beginning to the end of the disease, you can have no crepitus redux. This observation I have made in several cases. The fact which I wish to impress on your attention is, that in some cases of pneumonia expectoration may be completely absent: here the crepitus redux is never heard. Thus, in the case of Mary Nowlan, resolution went on to the re-establishment of the healthy and normal condition of the lung, without the slightest crepitus being heard. The same thing has been observed in two or three cases by my friend Mr. Dwyer. It is not necessary for the resolution of hepatisation, that there should be increased excretion into the bronchial tubes, during the time nature is employed in absorbing the matter deposited in the lung. In the ordinary way it is removed partly by absorption and partly by excretion into the bronchial tubes. Sometimes, however, interstitial absorption alone seems to be sufficient for this purpose, and the cases I have mentioned prove that it is in the power of nature to remove the morbid product in this way, without calling in the aid of the bronchial tubes. I may, however, remark that such cases are rare, and that resolution proceeds much more slowly than where free expectoration is present.

Before I conclude, I wish to make a few observations on a case of erysipelas which has recently occurred in our wards. Indeed we have had within the last two days three cases of erysipelas, the disease in two instances attacking patients who lay close to each other. Erysipelas is at present epidemic, and has been so for some time. Its character and mode of treatment have been well described by Mr. M'Dowell, in a late paper, published in the *Dublin Medical and Chemical Journal*, which I would recommend you to peruse attentively. It has been observed by Dr. Cusack and others, that when erysipelas prevails as an epidemic we may expect puerperal fever, and scarlatina of a bad and dangerous type. Hence

it would appear that the same noxious quality of atmosphere which generates one disease, may give additional malignity to others.

One of these cases of erysipelas occurred, in the fever ward, under peculiar circumstances. A young woman was admitted some time ago, labouring under spotted fever; she had been many days ill before her admission, and continued for a considerable time in an uncertain state. It is unnecessary for me to enter into any details regarding her treatment; but after the more obvious indications were answered, she was ordered to use the liquor chlorid. sodæ, and became convalescent, or *quam proxime* so. Her tongue began to clean, the abdomen was soft, the bowels natural, the skin cool, and the pulse about eighty. One evening she got fresh symptoms of fever, raved during the night, and next morning, when we visited the wards, we found her pulse accelerated, her tongue dry, black in the centre, and dusky-red at the edges and tip, and, in addition to this, she had some diarrhœa. The nostrils were filled with a semiconcrete mucus, exhaling a most offensive odour; in fact, one could hardly approach her bed without experiencing nausea from its extreme fetor. The inside of the nares was red and swollen; in short, erysipelas was seen occupying the nose, upper part of the face, and forehead. It had first attacked the skin and subcutaneous cellular tissue, producing considerable œdema, and from this it had extended to the mucous membrane of the nose. Erysipelas generally commences in the skin, but sometimes it has its origin in the mucous membrane.

I need not tell you that erysipelas of this œdematosus character, accompanied by such a remarkable change in the secretion of the nostrils, and occurring in a person weakened by fever, was to be looked upon as a dangerous disease. I have not time to enter into any further observations on this subject, and will proceed at once to mention our plan of treatment. How did we treat this case? Not by the usual antiphlogistic means, for the patient was greatly debilitated. Blood-letting, leeching, emetics, and purgatives, were here out of the question; however valuable they may be in ordinary cases, we could not use them here without risking the patient's life. You might think that an emetic or a purgative could do very little harm, and might effect much good, but you are to recollect that the girl had nausea, thirst, bowel complaint, and a great prostration of strength. What then was to be done? First, we applied a blister to the nape of the neck, to act partly on the brain and prevent delirium, and partly on the erysipelatous inflammation of the nose and forehead. How blisters act in this case I do not exactly know, but you are aware that a blister applied in the neighbourhood of a patch of this kind of œdematosus erysipelas, is often followed by very good effects. Whether it is by exciting a new irritation, or by directing the current of the cutaneous circulation to another part, and causing a flow of serum thither, I cannot tell, but blisters certainly do give very considerable relief. So much for external means.

Now with respect to internal, the only one we could give here, with any prospect of benefit, was the sulphate of quinine. But the patient had nausea, thirst, and diarrhoea, and if you administer quinine by the mouth, under such circumstances, you will do more harm than good. I therefore prescribed it in the form of enema, directing five grains of quinine, combined with four of tincture of opium, and two ounces of mucilage of starch, to be thrown up the rectum every fourth hour. Under this treatment the girl began to improve rapidly, the erysipelas faded away, the fever declined, and she is now once more convalescent. I also ordered her nostrils to be repeatedly syringed with warm water and vinegar.

Here, gentlemen, you perceive our treatment has been successful in a case occurring under very unfavourable circumstances. It is a case, the study of which will afford you some instruction, particularly if you compare its symptoms, progress, and treatment, with the case of erysipelas which occurred in the strong healthy girl who is lying near, and which we are at present treating on the emetic-cathartic plan.

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## LECTURE V.

**Case of suspected thoracic aneurism** — œdema of left arm and left side of the face ; probable cause or — Relations of the left vena innominata to the arch of the aorta — Reasons for concluding that the symptoms are produced by a solid tumour ; its Effects explained — Another remarkable case of thoracic tumour related — Case of violent and extensive pulsation of the heart depending on cerebral disease — Laennec's error concerning the indications for bleeding ; case illustrative of ; use of digitalis in such cases — Case of asthma, and treatment — St. John Long's liniment — Dropsy created by opium — Acupuncture in anasarca.

THE object of clinical instruction being the study of disease — their nature and their treatment — it is our duty to apply that study in the manner most likely to encourage the accumulation of practical knowledge. In accordance with this view, and in order to prepare you for the various emergencies that may hereafter demand the application of that knowledge, I shall proceed to select from the cases at present in the house, such as, from their singularity, interest, or importance, seem to claim something more than a mere passing notice.

A man named James Byrne, who lies next the door in the chronic ward, and has been supposed to labour under aneurism of the thoracic aorta, leaves the hospital to-day. It is very probable, however, that he will hereafter be forced to return ; for, whatever be the nature of his disease, it is incurable, and depends on some profound organic lesion. I would advise any gentleman, who has not attended to this very obscure case before, to take the opportunity of making an accurate examination of the patient during the short time he remains in the hospital.

While the phenomena of this case are still fresh in our minds, let us briefly discuss the question, whether this man really has aneurism of the thoracic aorta, and inquire whether there may not be some other cause to which his symptoms might be attributed with a more reasonable degree of probability. He was admitted on the 23d of October, 1834, and had been in the hospital before for a considerable time. He states that, eighteen months previously to his last admission, he was exposed to wet and cold, which produced a feverish attack, with symptoms of local inflammation in the lung, manifested by cough and difficulty of breathing. These were soon afterwards followed by dropsical swelling, and he applied at this hospital for relief. After remaining under treatment for about two months he began to improve, and left the hospital, as he states, quite relieved. He enjoyed tolerably good health, and continued to work at his trade as a bricklayer until about five weeks before his last admission, when he was again attacked with cough and difficulty of breathing, accompanied by œdema of the left side of the chest and left arm. On examining him after his admission, the following phenomena were observed: — The left side of the face and neck was slightly œdematosus; the left external jugular vein, with its immediate branches, engorged and very prominent; the left arm and left side of the chest œdematosus, and pitting on pressure; no affection of the bronchial mucous membrane, or parenchyma of the lungs, sufficient to account for the cough, can be detected by auscultation. Considerable dulness over the situation of the heart, and extending upwards over the sternal region on the left side; the right sternal region sounds clear and natural. The heart has not been removed from its normal situation; its pulsations can be felt over the ordinary extent, and no more, and they communicate a natural impulse to the finger. On applying the stethoscope over the heart its sounds were found to be regular and natural, but on placing it higher up, over that part of the sternal region which was dull on percussion, a loud *bruit de râpe* was heard.

Let us analyse these symptoms. In the first place, we found the anasarcaous swelling occupying the left side of the chest and the corresponding arm, and in a slight degree the left side of the neck and face, accompanied by a turgid state of the jugular vein. Now, you may lay it down as a general rule, that where one side of the chest and the corresponding upper extremity is affected by anasarca, it proceeds from some cause residing in the chest. I have told you before that in all cases of dropsy, whether acute or chronic — whether accompanied by ascites or not — *when anasarcaous swelling appears in the trunk and upper extremities before it is observed in the abdomen or lower extremities, the dropsy in general is inflammatory, or, when not so and chronic, it proceeds from disease of some of the thoracic viscera*, and it is in the chest alone that we are to look for its cause and origin. Now, applying this rule to the present case, we are led to inquire what is it that, by

pressing on the veins within the chest, gives rise to engorgement of the superficial vessels on the left side of the neck, and to ana-sarcous swelling of the left arm and left side of the chest. The pressure must, in our patient, be applied to a portion of the venous system, which carries blood from the left side of the head and the left upper extremity; in short, it must be applied to the great vein formed by the junction of the left subclavian and left jugulars. Now, this left *vena innominata sive vena brachio-cephalica* differs considerably from its fellow on the right side, which is very short, and nearly vertical in direction. The vein on the left side is three times longer, and directed transversely to the right, inclining at the same time downwards. It crosses behind the first bone of the sternum, lying in front of the three primary branches given off from the transverse portion of the arch of the aorta. You perceive, therefore, that it lies in a position most convenient to receive pressure in consequence of aneurism in any of these great vessels. This vein receives, before joining the cava, the internal mammary vein of the left side; you understand, now, why anything pressing on it is apt to produce engorgement of the superficial veins on the left side of the chest and trunk, together with oedema of these parts.

That we are not to look for the cause of the disease in the heart itself, appears from various circumstances. The situation of that organ is not changed; its beating can be felt only over the usual extent of surface; it communicates a natural impulse to the finger, and when examined with the stethoscope its sounds are discovered to be normal and regular. Neither can we attribute the disease to any affection of the mucous lining or parenchyma of the lung; the only morbid sounds which can be detected in the respiratory organs being a few slight bronchial râles.

Now, it is sufficiently obvious that the situation of the part which sounds dull on percussion would suggest the idea of aneurismal dilatation of the arch of the aorta, or some of its immediate branches. But had dulness over so large a space of the chest, embracing nearly the whole left sternal region, been produced by aneurism of the aorta, or any of its branches, it is evident that the aneurismal sac must be very large. Where an aneurism gives rise to extensive dulness of the chest, you may be always certain that it has arrived at a very considerable size; for the dulness is caused by the immediate contiguity of the aneurismal sac to the parietes of the chest, and hence the dulness is always in proportion to the amount of lung displaced. When you applied your hand over the sac, in such a case as that which we are now considering, where the aneurism was of large size and closely applied to the parietes of the thorax, you would feel a very remarkable pulsation; your hand would be, as it were, lifted from the chest by each impulse communicated to the sac, and you would have palpable, unequivocal evidence of the cause of the dulness on percussion. Now, in the case before us, there was no such pulsation observed — whether we examined him while lying quietly in bed, or after he had walked briskly about for

some time so as to excite the action of the heart and arterial system. Again, aneurismal sacs, as you are all aware of, before they produce extensive dulness of any portion of the parietes of the chest, point, as it were, in some particular situation, becoming distinctly prominent, and producing an eccentric motion around them, in consequence of the thoracic parietes being absorbed, or yielding at the point of greatest pressure.

From these circumstances, considerable doubts have arisen in my mind as to the cause of this man's symptoms being connected with aneurismal disease of the great vessels of the thorax. I am rather inclined to attribute the *bruit de râpe*, and dulness of sound on percussion, to a lesion of a different character. Let us suppose that in this case a tumour has been developed in the cellular or glandular substances, situated in or towards the left side of the chest, occupying the anterior mediastinum, pushing back the lung, and pressing on the large vessels connected with the base of the heart; what are the phenomena it would naturally present? First, we should have dulness of sound on percussion, corresponding in extent with that portion of the chest to which the tumour was applied; secondly, we should have *bruit de soufflet*, and probably *bruit de râpe*, in consequence of the pressure of the tumour on the aorta; thirdly, a tumour in this situation would necessarily compress some of the larger bronchial tubes, and thus give rise to cough and dyspnœa. If a tumour presses on the trachea, or one of the larger bronchial tubes, why does it produce pulmonary irritation? Not by mere pressure on the part—for the pressure is applied so gradually, and with such a broad surface, that its effects could be scarcely felt; and it might go on to produce complete obliteration of the tube without giving rise to any inflammation, if its action were limited exclusively to the part compressed. *But it strangles, as it were, that portion of lung to which the tube belongs;* a certain portion of a large bronchial tube is considerably narrowed by the pressure of the tumour, the free entrance and exit of air are impeded, and consequently that portion of the lung, which may be very large, is greatly deranged in its functions. Hence arises that sensation of distress termed dyspnœa. Again, as soon as the free ingress and egress of air are prevented, we have not only the occurrence of dyspnœa, but also other effects equally referable to the same cause; the blood circulating through that part of the pulmonary tissue is imperfectly aërated, and does not undergo the necessary change; the secretions and exhalations from that part are altered and unnatural, and consequently it becomes engorged, giving rise to irritation, cough, and expectoration. To understand this aright, you should bear in mind that this portion of the lung undergoes the same changes that the whole of the lung undergoes in persons who are asphyxiated; that is, it becomes gorged with blood—for the moment that the black venous blood, which is carried into the pulmonary tissue from the right side of the heart, ceases to be properly aërated, that moment it stagnates in the lung, and soon

renders it engorged. This is precisely the state of lungs which occurs in the posterior portions of those organs in persons who die a lingering death, and which has most absurdly been termed the pneumonia of the dying.

But, to return to this man's case, I am inclined to think that the symptoms here present may with more colour of probability be attributed to the presence of a solid tumour developed in the chest, the nature of which I can only guess at, and that it is situated in the anterior mediastinum, close to the origin of the aorta. Some of these tumours which have been discovered in the chest are of an adipose nature; some of them resemble the cerebral substance in colour and consistence, and others are like the steatomatous tumours formed in other parts of the body.

A few months ago, Surgeon Blackley was consulted about a young gentleman who had been gradually attacked with symptoms of pulmonary irritation, cough, and difficulty of breathing. The disease was supposed by some to be consumption, and a physician who had been in attendance thought it depended chiefly on derangement of the stomach. Mr. Blackley had his doubts with respect to both of these opinions, and requested of me to visit and examine the patient. I could not detect any râles indicating the existence of tubercles, but over a large portion of the chest, and nearly corresponding with that part which sounds morbidly in the patient Byrne, there was dulness on percussion, the young gentleman had fits of cough and dyspncea, and now and then difficulty of swallowing; a *bruit de soufflet* could be heard over the dull portion of the chest, but the sounds and impulse of the heart were regular and natural. I expressed a very doubtful opinion of the case, but at the same time stated my belief that the case was not one of tubercular phthisis, of empyema, or of pneumonia; and I also said that it did not seem to be produced by disease of the heart itself. I dwelt especially on the existence of *bruit de soufflet* in the region which was dull on percussion, and which was somewhat removed from the heart, and which, from its situation, I interpreted as indicating something pressing either the arch of the aorta, or some of its branches. I was not able to detect pulsation or any other symptom of aneurism, and consequently professed myself unable to say what that something was. The result proved that, although the true cause of the disease did not occur to me, I had nevertheless approached the discovery as nearly as could be done without actually making it; for, soon after this, the young gentleman died, and on opening the chest a large tumour of a steatomatous character was discovered pressing on the divisions of the trachea, of the aorta, and on the œsophagus. Another case of the same kind was published some time ago in the *Dublin Medical Journal*. We are, I believe, still in the infancy of diagnosis, so far as regards tumours developed in the chest, producing anomalous symptoms, and giving rise to suspicions of aneurismal or tubercular disease. With respect to the patient Byrne, I am inclined to think that the morbid phenomena are referable to a

tumour of this description, and I ground my diagnosis chiefly on the absence of pulsation, which should be distinctly present if the dulness on percussion, here observable, depended on the proximity of an aneurismal sac to the parietes of the thorax.

As I am speaking of pulsation, permit me to observe that, in some cases, where there is no actual disease present, the pulsations of the heart are visible over a very large extent of surface, so as to convey the impression that aneurismal dilatation exists. Of this I have lately seen a very remarkable example. In a case which I saw this week with Mr. Cusack, the patient's heart could be observed beating violently over the whole chest, and Mr. Cusack, when he laid his hand on the patient's chest, said he could not divest himself of the idea that there was some unnatural condition of the heart and great vessels. Now the violence of the heart's action in this case depended on disease of the brain. In some inflammatory or congestive diseases of the brain with a tendency to coma the heart labours intensely, its pulsations are quite awful, and it seems as if it were about to burst through the parietes of the chest. Again, this extraordinary action of the heart occurring in cerebral disease is almost invariably accompanied by a hard bounding pulse. I mention these circumstances for the purpose of putting you on your guard, and that you should not in such cases allow yourselves to be deceived, and suppose that the symptoms are to be met in every instance by copious blood-letting. Some cases of this description will bear depletion well, others will not. You know it was a maxim of Laennec's, that in bleeding we are to be guided more by the strength of the heart's action than by that of the pulse. I have already shown that this test does not always hold good. You recollect the patient who was under treatment here some time ago, with violent action of the heart and a hard bounding pulse. This patient, a strong healthy man, had just disembarked, after a rough passage from Liverpool, during which he vomited much, and suffered intensely from headache, which he ascribed to the violence of retching. Walking along the quay, he was suddenly attacked with hemiplegia, and was immediately brought into the hospital, where he was bled and purged. Next day we found him still hemiplegic, and complaining of violent pain in the head. Active antiphlogistic treatment was used, but on the third day he became comatose, and was convulsed in the limbs of the healthy side. His face was flushed, his temporal arteries were dilated and pulsated violently, and his pulse was hard, while the heart pulsated with great strength. This attack came on during our visit, and I ordered a vein to be opened immediately. The blood flowed freely. When about fourteen ounces were taken the pulse suddenly flagged and grew extremely weak, and never again rose. He died in about two hours, and an ignorant person would have ascribed his death to the bleeding. On examination, sixteen hours after death we found extensive puriform effusion on the surface of the brain, together with a large clot of blood and surrounding ramollissement.

This was a very remarkable case, and conveyed a very important lesson, teaching us not to be too much led away by the violence of the heart's action; for I have no doubt that here the use of the lancet shortened the man's life. Had such a case as this occurred to any of you in private practice, it would be almost fatal to your reputation. Here we have a patient with his face flushed, his skin hot, his temporal arteries throbbing violently, and his pulse feeling like a piece of whip-cord; he is blooded, and up to a certain point the pulse remains firm; he then begins to sink rapidly, and expires in two or three hours. Bear in mind, then, that a state of the system may exist, in which the heart's action is intense, and the pulse hard and bounding, and yet where bleeding to any amount will be badly borne.\* Such cases are generally connected with inflammation of the brain, accompanied by a tendency to coma. Here you must bleed with great caution, let the quantity you take away be moderate, and rather rely upon large relays of leeches and strong purgatives for removing the cerebral symptoms. You may afterwards endeavour to moderate the heart's action by the use of digitalis and opium; a grain of the former, and one-twelfth of a grain of the latter, made into a pill with some extract of hops, may be given every second hour, until it begins to produce some effect on the heart's action, when it may be either discontinued or given at longer intervals, as the circumstances of the case may require. Where, after bleeding and other antiphlogistic measures, the pulse continues high, and the action of the heart violent, I can recommend digitalis very strongly, and the small portion of opium here combined with it can do no harm. Combined in small quantities with digitalis, opium does not produce any tendency to determination to the head, and it prevents the digitalis from sickenning the stomach. I have frequently employed it, and found great benefit from its exhibition. I may observe, that when you are anxious to secure the full sedative effects of digitalis on the heart and pulse, you must give it in large doses. In small quantities it does not act well, and seems rather to produce a tendency to excitement of the heart.

There is another patient about to leave the hospital to-day, on whose case I wish to make some observations. This young man, whom you have seen lying in the chronic ward, in the bed next but one to Byrne's, caught cold about seven or eight months ago, followed by cough, wheezing, and dyspncea, which, after a month or six weeks, subsided. About two months before he came into the hospital, he renewed his cold, and with it the cough and dyspncea returned. On his admission he complained of difficulty of breathing, which attacked him every night; he went to bed well,

\* [Less frequently we should say in inflammations proper, than in those affections of the brain which depend upon some general diseases, such as kidney or liver affections of the chronic kind, and occasionally in continued fevers. In such cases, cupping and blistering are more frequently of service than large bleedings. — *Ed.*]

and slept tranquilly for two or three hours, and then was awakened by pain and sense of tightness in the chest, with great dyspnoea. When the paroxysm came on, it compelled him to get up and walk about the room gasping for breath; and, after continuing for two or three hours with great dyspnoea, wheezing, anxiety, and cough, went off with free expectoration and sweating. As soon as the sweating and expectoration appeared, he lay down without any inconvenience, and slept quietly until morning. The only additional symptom he complained of was palpitation of the heart, which sometimes affected him when employed at hard labour. On examining the lungs there was nothing found except a few bronchitic râles. The heart was normal in its action, and no morbid sound could be detected by the stethoscope. In addition to this, you will recollect that the man was in the prime of life, had a full and well formed chest, a quiet pulse, regular bowels, and a good appetite.

Here you perceive a man from repeated colds gets chronic irritation of the bronchial tubes, and this induces asthmatic paroxysms, which comes on, as is usual in such cases, at a certain hour of the night. It was plain, therefore, that he was labouring under a well marked form of asthma, a disease which, in its pure and simple state, is seldom met with in hospitals, being generally observed in connection with disease of the heart, or long-continued bronchitis in old persons. Chronic bronchitis is one of the most common causes of asthma; indeed, you will scarcely ever meet a patient who has been subject to chronic irritation of the bronchial tubes, who does not also labour under more or less asthmatic dyspnoea. The disease is generally met with in persons advanced in life, and who have suffered from repeated attacks of bronchitis; it is not usual to find it in so young a man as this patient, and presenting, as he does, such very slight symptoms of derangement of the bronchial mucous membrane.

This case exhibits a remarkable proof of what may be done by simple means in relieving an urgent disease. The man was, with the exception of asthma, in good health; his bowels were regular, his appetite good, his pulse tranquil, and the signs of pulmonary irritation trifling. There was no necessity, then, for administering remedies to improve the tone of the digestive organs, nor were we authorised to use the lancet or apply leeches. I therefore confined my attention to two points: the application of irritants to the neck and chest externally, and the internal use of remedies calculated to relieve bronchial irritation. I ordered him to rub the nape and sides of the neck, and the fore part of the chest, with a liniment composed of strong acetic acid,  $\frac{2}{3}$  ss., spirit of turpentine,  $\frac{2}{3}$  jj., rose water,  $\frac{2}{3}$  iiiss., essential oil of lemons a few drops, and yolk of egg in sufficient quantity to suspend the turpentine. This liniment is an imitation of the celebrated liniment of St. John Long. I gave a bottle of the real liniment to Dr. Apjohn, to analyse, and he thinks it consists of acetic acid, spirit of turpentine, and two animal mat-

ters, one containing azote, the other not; the latter probably some species of fat, probably goose-grease. Now this fat did not exist in St. John Long's liniment in the form of soap, it was evidently some kind of fatty matter blended with water, probably by means of trituration with yolk of egg. The active ingredients are spirits of turpentine and strong acetic acid. This liniment should be applied by means of a sponge. It acts as a rubefacient, and generally induces an eruption of small pimples after a few applications. The spirit of turpentine must be well mixed with the water (which ought to be added to it gradually) by means of yolk of egg, before the acetic acid is added.

With this liniment our patient was desired to rub the fore part of the chest, and the nape and sides of the neck. It was applied to the chest with the view of relieving the bronchial irritation, and we ordered it to be rubbed over the nape of the neck, along the course of the cervical portion of the spinal marrow, and over the sides of the neck along the course of the pneumogastric nerve, because all the organs to which the latter nerve is distributed, are evidently affected in cases of spasmodic asthma. Thus a paroxysm of asthma is not only attended with increased action of the heart, dyspnoea, and hurried breathing, but also with marked derangement of the stomach, particularly towards the termination of the fit, when the patient generally has a feeling of uneasiness in the stomach, with flatulence and a sense of fulness, induced probably by the derangement of circulation in the lung. You are aware of the close sympathy which exists between the stomach and lungs, and you must have been struck with the fact, that stimulant and irritating remedies applied to the epigastrium often relieve affections of the lung more completely than when applied to the chest. Thus in using the tartar emetic ointment for the relief of hooping-cough, it has been found to act most beneficially when applied over the region of the stomach; and the same thing may be said of Roche's embrocation, which does more good when rubbed over the spine or epigastrium, than when applied to the parietes of the thorax. On these principles, I ordered the counter-irritation to be applied over the course of the cervico-spinal and pneumogastric nerves, over the chest, and subsequently over the stomach.

This liniment in a very short time produces redness and heat of the parts to which it is applied, and it is more than probable that its effects are not limited to temporary rubefacience, but that it also acts on the nervous system. We have innumerable proofs that turpentine exercises a special influence over the nervous system, and we know that it is rapidly absorbed even without the aid of friction. I fear, however, that we shall never be able to confer on our liniment all the wonderful properties attributed to that of St. John Long. You know it has been asserted that St. John Long's liniment never reddened the skin; except over the exact spot where disease was situated. I was assured by a young lady who used this liniment, that she rubbed it all over the chest, and that it pro-

duced no discoloration of skin, except in two spots where she felt pain. She at first mentioned but one spot which was painful, but St. John Long, having applied the liniment himself, told her she had deceived him, and that there was pain in another spot. It had other effects equally miraculous. An eminent Dublin lawyer declared that it drew nearly a pint of water from his head, and Lord Ingestre testified that it extracted quicksilver from his brain! These, and other wonderful stories, told by several persons of distinction with a full belief in their authenticity, furnish a useful lesson to mankind, showing that gross credulity is not confined exclusively to the poor and the ignorant, but may be found among the highest classes of society. It is a singular fact also, and illustrative of the tendency which exists in human nature to deceive and be deceived, that notwithstanding the repeated failure, and even fatal effects, of St. John Long's applications, many persons still regard his opinion as oracular, and look upon his remedies as inestimable discoveries. When I mentioned to the gentleman who brought me the bottle of liniment, that St. John Long himself died of phthisis, and brought this forward as a strong argument against the infallible efficacy of his remedies, he said that this very circumstance was one of the most remarkable proofs of his sagacity, for St. John Long had always maintained that the liniment was not suited to his own case, and that there was something in his constitution which neutralised its good effects; and so it happened, for when he applied the liniment to his skin it did not produce the red spots which usually resulted from its application in other persons. In fact, such was the credulity of St. John Long's patients, that his death passed among them as the strongest proof of the infallibility of his medicines. Indeed he is considered by many of our nobility as a sort of medical martyr, who, having sacrificed life in the accomplishment of his mission, rising from earth, let his prophetic mantle fall on the highest bidder!

But to return to our patient. In this case the liniment did a great deal of good, but it was not the only means we employed. We observed that the asthmatic paroxysm came on every night, continued for two or three hours, and then went off with free expectoration and sweating. In order to prevent this, we gave him a draught, which he was to take when awakened by the pain and sense of tightness in his chest. He took this, and it had the effect of arresting the paroxysms, so that he no longer found it necessary to leave his bed. That this remedy had succeeded in averting the disease, was plain from the following circumstance:—one day the clinical clerk had omitted to repeat his draught, and he consequently got no medicine; on that night the asthmatic paroxysm returned and went through its usual course as before. This draught was very simple, being composed of half a dram of tincture of hyoscyamus, half a dram of vinegar of squills, and the same quantity of ipecacuanha wine in an ounce of camphor mixture. It is scarcely necessary for me to explain the nature of the ingredients.

The tincture of hyoscyamus possesses narcotic and antispasmodic properties, and ipecacuanha and squill are known to have great efficacy in disease of the bronchial mucous membrane, being both promoters of expectoration, and the latter also acting on the urinary organs. Without, however, attempting to explain the precise mode in which each of these ingredients acted, it will be sufficient to state that the combination had a beneficial effect, and checked the asthmatic paroxysms. We persevered in using it, as well as the liniment, until all tendency to asthma had disappeared, and the normal state of the function of respiration became perfectly re-established.

There is in the male chronic ward a patient named Garret Kane, to whose case I shall for a few moments draw your attention. This man is about forty-five, and, like most of his countrymen who have been addicted to whiskey, he is beginning to show the fatal effects of intemperance. He had been ill for several months before he came into the hospital, and is at present labouring under general anasarca, affecting the chest, upper and lower extremities, accompanied by an accumulation of fluid, but not very extensive, in the cavity of the peritoneum. I do not intend here to enter into the general pathology of dropsy, or to inquire what was its origin in this instance; I shall confine myself to an explanation of the reasons which have induced me to select the plan of treatment I have adopted. In the first place, it is a case of chronic dropsy; secondly, it is unattended by fever; thirdly, it is a case in which mercury has been used with some temporary relief, but the disease returned afterwards in a worse form; lastly, it is dropsy accompanied by obstinate diarrhoea, and therefore contra-indicating the use of purgatives or even of diuretics, for you are aware that the whole class of diuretic medicines acts more or less on the intestinal canal. I may mention here, acetate and nitrate of potash, turpentine, colchicum, squill, and many other remedies of the same kind. All diuretics act either as purgatives, or they have a stimulant and irritating effect on the bowels. This patient has bowel complaint, and therefore we are prevented from giving diuretics or purgatives; and the absence of inflammatory symptoms precludes the employment of the lancet or cupping-glasses. You perceive that our field for practice is extremely limited; we dare not bleed, cup, purge, give mercury, or diuretics; the nature of the case contra-indicates the use of all these remedies, and hence we are deprived of the power of using the most energetic agents employed in the treatment of dropsy. What then is to be done? Having observed that the man's appetite and thirst are very great, and that his urine contains a large quantity of albumen, that he has no fever, and no symptoms of local inflammation, I decided at once on trying the efficacy of Dover's powder in doses of a scruple in the day, divided into four pills, and gradually increased until it amounts to half a dram, or two scruples, in the twenty-four hours. A species of analogy exists between cases of this kind and cases of diabetes; in

both there is the same tendency in the blood to part with its watery constituents, in both the same inordinate thirst and craving appetite are observed, and in both there is the same deposition of animal matter in the urine. The principal difference between them is, that in one case the watery fluid is effused into the cellular substance and peritoneal cavity, while in the other it is eliminated from the system through the medium of the kidneys. It was this analogy which led me to adopt Dover's powder in the treatment of this man's case. Last year we had a patient here under treatment who was dropsical, and at the same time passed five quarts of urine daily; before I had recourse to the ordinary treatment for dropsy, I determined to try the use of Dover's powder. The disease yielded rapidly to this plan of treatment, and the man left the hospital quite relieved.

In the patient Kane a small sore was formed on one of the lower extremities, perforating the skin and cellular substance to the depth of two or three lines; through this aperture a great deal of the anasarca fluid has drained, and still continues to flow off. This is a very fortunate circumstance, as it will tend to prevent any excessive accumulation in the cellular membrane. Previous to its occurrence I had ordered the scrotum and prepuce, which were enormously distended, to be punctured with a needle. The best mode of doing this is to prick the part quickly, so as to give as little pain as possible, the point of the needle should merely penetrate the true skin, the punctures should vary in number from twenty to fifty or sixty, according to the size of the part and the extent of the effusion, and they should be at least half an inch asunder. By observing these rules you will succeed in evacuating the water without running the risk of exciting erysipelas, which in such cases frequently leads to disastrous consequences. Puncturing with a lancet is not so good as with a needle, it is much more apt to excite irritation in the parts, and thus lead to the supervention of erysipelatous inflammation. The judicious application of acupuncture, in cases of chronic dropsy, often accomplishes a great deal, for when the external anasarca œdema is thus drained away, the fluid in the peritoneal cavity is more rapidly absorbed; in some cases, indeed, the good effects of external drainage on the ascites are so rapid, that we are almost tempted to believe that some direct communication may exist between the subcutaneous tissue and the apparently shut sac of the peritoneum. Be this as it may, the good effects in some cases are as decisive as if such a communication existed. This phenomenon countenances the hypothesis of the possibility of fluids percolating through lining membranes.

*Note.* — In the foregoing lecture I have adverted to a subject not hitherto sufficiently considered by pathologists, viz., the immediate effects produced in the bronchial tubes and pulmonary tissue when an internal tumour presses on one of the bronchi. The result is a certain degree of cough, expectoration, and dyspnoea. In some

cases the bronchial inflammation thus produced may go on to actual ulceration, which authors have been too much disposed to regard as being mechanically produced by the local irritation of pressure. Professor Albers, of Bonn, cites one case in which a scirrhouss tumour of the œsophagus produced ulceration of the neighbouring compressed bronchus, but he says nothing of the manner in which this effect was accomplished. In some cases, no doubt inflammation may be propagated from the morbid growth, but in tumours I speak of, no evidence of inflammation existed. Professor Albers's observations on this subject may be seen in his paper on Widening of the Pulmonary Artery, *Rust's Magazin für die gesammte Heilkunde*, 42 Band, 1 Heft, p. 177.

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## LECTURE VI.

Case of secondary symptoms which made their appearance soon after a mercurial course ; method of treatment — Case of syphilitic eruption — Mouth suddenly affected by a small quantity of mercury — Effects of this on the progress of the cure — Ear-ache preceded by rigors coming on during the course of fever ; danger of ; treatment — External tenderness ; value of, as a symptom in inflammations of brain, lungs, abdomen, &c., &c. — Vomiting considered as a symptom in fever ; its treatment — Chronic rheumatism ; successful treatment of — Obstinate case of arthritis ; cure of by local applications — Observations on the effects of mercury applied locally — Case of syphilitic iritis ; action of belladonna in.

You have observed that we have two cases of syphilis under treatment — one in the female, the other in the male chronic ward. They possess no peculiar interest beyond the ordinary run of syphilitic affections, still they deserve a share of your attention ; for it is on your experience of individual cases, much more than on the knowledge derived from books, that your treatment of this obscure and Protean malady will depend.

It is now more than a year since the female patient received the syphilitic poison into her constitution. What the nature of the primary sore was we cannot ascertain, but from the account she has given, it seems to have been true chancre. Some time after this occurred, she got sore throat, articular pains, and an eruption, for which she was treated in this hospital about ten months since, and dismissed apparently cured. The disease, however, returned in a few weeks, and she has been labouring under its effects up to the present moment. Three circumstances in this case demand our attention : first the re-appearance of syphilis after a mercurial course — for she was mercurialised here soon after her first admission ; secondly, she exhibits a degree of syphilitic cachexy, being rather pale and emaciated ; and, thirdly, the slow progress which the disease has made in her system, being limited to a few blotches

on the skin, some periostitic swelling of the bones of the leg, pains, and slight arthritis.

In treating this case I intend to give mercury, so as to affect her system; and, having accomplished this, I shall keep her under its influence for some time. I shall also, should it appear necessary, order her a free allowance of the decoction of sarsaparilla. Under this treatment you will find that the eruption will soon disappear, the periostitic pains and swelling be removed, and the constitution begin to improve. She has been ordered three grains of blue pill, and half a grain of calomel, three times a day — a quantity which you will generally find sufficient to bring on mercurial action in females. I have no doubt but that the disease will, in this case, yield to mercury in a very short time, and that her health will be completely restored. The failure of mercury in producing a permanent cure, on a former occasion, is no argument against its employment here; if there were no syphilitic taint in question, I do not know any remedy by which the cutaneous affection and the periostitis could be more effectually relieved. On another occasion I shall speak more at large upon this important subject, and shall bring forward facts in proof of the assertion, that mercury may fail to eradicate the effects of the venereal poison at a certain period of the disease, and may nevertheless be capable of curing the disease effectually at a future time. This may appear paradoxical, but it is not the less true.

The other patient, John Kelly, presents an eruption of red scaly blotches, extensively diffused over the trunk and extremities, and closely resembling psoriasis. This man, like many others, denies the occurrence of a recent syphilitic taint, and gravely states that it is some years since he exposed himself to infection. Instances of this kind are to be met with every day; patients will not tell the truth about these matters, and false statements tend to throw a darker shadow over a disease in itself sufficiently obscure. However, in this case, the poison seems to have confined its effects to the cutaneous surface; there is no affection of the throat, periosteum, or joints. The eruption covers almost every portion of his body; it made its appearance two months before admission, and was preceded by feverish symptoms and pains in the larger articulations.

In undertaking the treatment of this case, there is one practical point to be held in view. The man's general health is good, his strength undiminished, and his circulation active. I therefore ordered him to be blooded, and have kept him for eight or nine days on antimonials and low diet. By preparing him in this way, I knew that the mercury which I intended to give him would act more rapidly on his system; and such was the case — for on the second day after he commenced using it his mouth became affected. But here a difficulty arose, which, in cases of this description, is apt to embarrass our treatment: the mercurial influence appeared much sooner than I expected or wished. He had been ordered

three grains of blue pill, and half a grain of calomel three times a day ; and on the second day, before he had taken six pills, salivation commenced. Now, in all cases where mercury affects the mouth sooner than you desire, and as it were in spite of you, it will not do as much good as where its action proceeds regularly and in accordance with your purpose. It is a general rule, that most benefit is to be expected from mercury where its action is regularly progressive, or where the quantity taken is in proportion to the effect produced on the system. Hence we look upon it as an unfavourable occurrence, when a small quantity of mercury occasions sudden and copious salivation ; such an event deranges our calculations, and tends to embarrass our practice. Now, in this case the patient, after taking five pills, became salivated on the second day. We found we had been going on too fast ; it was necessary therefore to pause, but not desist. We accordingly reduced the quantity of mercury to three grains of blue pill, and half a grain of calomel, to be taken every second night. By these means we kept up a slight discharge of saliva, and the man's symptoms began to improve. The eruption is now disappearing rapidly, and it is to this point I wish to call your attention. What are the marks which indicate the subsidence of an eruption of this kind, and by what criterion are you enabled to judge of the progress of the cure ? When the parts are about to return to the healthy condition, three circumstances occur ; first, the vivid red or copper colour of the eruption begins to fade ; secondly, the heat of the affected parts become reduced ; thirdly, the excessive secretion of morbid cuticle is arrested, and the quantity of minute scales covering the blotches diminished. In such cases, the affected parts of the skin are highly vascular, and the secretion of cuticle is morbidly excessive in quantity ; hence the continued desquamation from the surface of the blotches. You should, therefore, attend not merely to the colour of the eruption, but also to the quantity of minute scales on each blotch, when you wish to ascertain whether an eruption is fading or not. You can judge of this by your eye, or you can tell it by passing your finger over the diseased surfaces. The fading of the colour of the eruption, the decrease of the elevation and roughness in the blotches, and the gradual disappearance of the minute scales — these are the circumstances by which you can ascertain the subsidence of a syphilitic eruption. As the cure progresses, you find the parts assuming a more natural appearance ; the same quantity of morbid cuticle is no longer thrown out by the affected spots of corium ; the blotches become smooth and lose their elevation, and, finally, the red colour of the skin disappears. Of all the symptoms, discoloration of skin is the last to recede, and it generally happens that enough has been done in the way of treatment long before the skin resumes its natural complexion. If you were to continue the administration of mercury until the natural colour returned, you would very often push it to a useless and even dangerous extent.

In such cases, a faded brownish or dirty tinge remains long after the re-establishment of healthy action.

There is a case in the female fever ward which requires a passing observation. A young woman, previously in the enjoyment of good health, was seized with symptoms of fever after exposure to cold ; she got rigors, followed by headache, hot skin, thirst, nausea, and acceleration of pulse. It is unnecessary for me to detail the symptoms which attended her illness during the past week ; I shall content myself with pointing out the symptoms which particularly attracted my attention to her case on Saturday morning. At that time her fever had increased ; she complained of severe headache and restlessness ; had foul tongue, thirst, and symptoms of gastrointestinal irritation. Such matters, however, demand no very particular consideration ; what chiefly fixed my attention was the occurrence of slight and transient rigors during my examination : I observed her shuddering three or four times in the space of a few minutes. On questioning her respecting these brief rigors, she informed me that they had occurred with more or less frequency for the last three days. Now, whenever you meet with a symptom of this description in fever, be on your guard ; watch the case with anxious, unremitting attention, and never omit making a careful examination. It is in this way that one of the worst complications of fever — treacherous and fatal disease of the brain — very often commences. On examining this girl, we found that she had not only headache, but also acute pain referred to the left ear, the external meatus of which was observed to be hot and tender to the touch. In addition to this, we were informed by the nurse that she had been seized with a sudden fit of vomiting shortly after we left the ward on the day before. Here was an array of threatening symptoms calculated to awaken attention in any, even the most heedless observer. A patient, after exposure to cold, is attacked with symptoms of fever ; she has headache and restlessness ; she then begins to complain of acute pain in the ear, darting inwardly towards the brain ; and, finally, is seized with sudden vomiting. Under these circumstances, it is not difficult to form a diagnosis, and there can be little doubt but that the phenomena here present were indicative of incipient inflammation of the membranes of the brain. It is not easy to say whether in such cases the inflammatory affection of the membranes precedes the external otitis, or whether the inflammation commences in the external ear and spreads inwards, though I am inclined to adopt the latter supposition, and the circumstance of the fever and earache arising from cold seems to give an additional degree of probability to this view of the question. Be this as it may, there could be no doubt but that this girl was, on Saturday, labouring under incipient inflammation of the membranes of the brain, as denoted by headache, rigors, acute pain in the ear, and vomiting.

Here let me observe, gentlemen, that, in cases of this description, I look on the occurrence of external tenderness, not merely as an

indication of internal disease, but also as a favourable symptom. I have remarked that in all cases where this happens, the physician becomes more speedily and sensibly aware of the existence of internal disease, and the remedial means employed act with a more decidedly beneficial effect. I would prefer, having to deal with an inflammatory affection of the brain or bowels, accompanied by external tenderness, and would feel much more certain as to the result, than if this symptom were but faintly marked, or totally absent. This observation is founded on experience.

In treating this case, you have seen that I have ordered relays of leeches to be applied in the vicinity of the affected ear until the earache has ceased. I have long followed this practice of applying a number of leeches in succession for the relief of local inflammation, and I can state with confidence that the result has been, in the majority of cases, highly satisfactory. Some prefer the application of a great many leeches at once; but my experience speaks strongly in favour of the practice of applying a small number, repeated at short intervals, until the violence of the local inflammation is subdued. Relays of six or eight leeches will suffice in the majority of cases of pectoral, cerebral, or abdominal inflammation.\* In some, however, when the attack is violent, fifteen or twenty must be applied at once; each succeeding relay may consist of a smaller number than that which preceded it. In this manner I have maintained a constant oozing of blood from the integuments over an inflamed organ for twenty-four, or even thirty-six hours. In addition to this, I determined to bring her system rapidly under the influence of mercury, and, with this intent, administered calomel to the amount of a scruple in the twenty-four hours. These means have acted favourably, and she feels much better to-day. (This patient perfectly recovered.)

Allow me to make one observation more which this case suggests. This young woman, you recollect, had, on her admission, some epigastric tenderness, which we removed by leeching, and she remained free from any symptoms of gastric irritation until last Saturday, when she got a sudden attack of vomiting. Now, *in all feverish complaints, where, during the course of the disease, the stomach becomes irritable without any obvious cause, and where vomiting occurs without any epigastric tenderness*, you may expect congestion, or incipient inflammation, of the brain or its membranes. If called to a case of scarlatina, where there is severe vomiting, and perhaps diarrhoea, unaccompanied by thirst or epigastric tenderness, what should your practice be? Are you to direct your attention to the alimentary canal, and endeavour to arrest these symptoms? No. The vomiting here depends on active congestion of the head, and such cases are very apt to end

\* [This practice is often excellent. As the American leeches are smaller than the European, to produce the same effect twice the number should be applied if the leeches be large, but if small three times as many would be about equal.—*Ed.*]

in coma, convulsions, or death, from disease of the brain. You are all aware, that in cases of injuries of the head, followed by congestion of the brain, vomiting is one of the most prominent symptoms. The same thing occurs in febrile affections, attended with determination to the head. You are not to conclude that a fever is gastric, because it commences with nausea and vomiting; this is a serious, and very often a fatal, mistake; yet I am sorry to say it has been committed by many practitioners, and I have been guilty of it myself. In such cases, you should not waste time in attempting to relieve gastric irritation by cold drinks, and leeches to the epigastrium, or to check diarrhoea by chalk mixture and opiates; you should direct your attention at once to the seat and origin of the mischief, and employ prompt and effectual means to relieve the cerebral congestion. Where the disease sets in with severe vomiting, unaccompanied by distinct evidences of gastric inflammation, whether it be common fever, or scarlatina, or measles, or small-pox, I commence the treatment by applying leeches to the head, convinced that in this way I shall be most likely to prevent an approaching dangerous congestion of the brain. I am anxious to impress this observation on your minds, because I am fully sensible of its importance, and feel certain that you will derive much advantage from bearing it in recollection during the course of your future practice.

The next affection to which I shall draw your attention is chronic rheumatism, of which we have a well-marked instance in the man who lies in the chronic ward immediately under the window. He complains of pain, weakness, and numbness of the lower extremities, for which he used the decoction of sarsaparilla and minute doses of corrosive sublimate, for a fortnight, without any obvious improvement in his symptoms. His complaint is of considerable duration, it being now fifteen weeks since he was first attacked. This, I need not tell you, is a very unpromising feature in his case. When rheumatism has continued for three or four months, it becomes a very intractable disease; indeed, there is scarcely any affection which tasks the ingenuity, and tries the patience, of a medical man more than chronic rheumatism. In this case, however, we have been so fortunate as to hit on a remedy suited to the complaint; the man has been rapidly improving within the last fortnight, and is now nearly well. You will recollect that, when I undertook the treatment of this case, the patient was free from fever, his general health but little impaired, his pulse tranquil, his appetite good, no remarkable tenderness or redness of the joints—in fact, nothing to indicate the existence of acute local inflammation; consequently, it would have been useless to have recourse to leeches or blood-letting, or to administer antimonials, nitre, or colchicum. In such cases as this a different line of practice must be followed; you must have recourse to stimulant diaphoretics—remedies which will increase the secretion from the skin, at the same time that they exercise a stimulating action on the nervous and

capillary systems. Accordingly we prescribed for this man the following electuary, of which he was to take a teaspoonful three times a day: — Powdered bark 3j., powdered guaiacum 3j., cream of tartar 3j., flower of sulphur 3ss., powdered ginger 3j., to be made into an electuary with the common syrup used in hospitals. The guaiacum not only acts on the nerves, tending to remove chronic pains, but also acts on the skin: you will find these, and other properties possessed by it, detailed at large in your works on *Materia Medica*. Whether given in the form of powder or tincture, it often proves an extremely useful remedy in cases of chronic rheumatism, where no symptoms of active local inflammation or general fever exist; where either of these are present it is inadmissible. Ginger has also a stimulant effect, although its action is much more limited. It is a favourite domestic remedy, and is very frequently prescribed by our rival candidates for therapeutic celebrity — old ladies — in cases of chronic, or, as they term it, cold rheumatism; and I must confess that I have seen some benefit derived from their specific — ginger tea. With these we combined sulphur, which exerts a peculiar stimulant operation on the skin and alimentary canal. Sulphur is an extremely active remedy, and singularly penetrating in its nature, finding its way into many of the secretions and most of the tissues of the body. You will find it in the urine in the form of sulphates, and it is exhaled from the skin and mucous membrane of the bowels in the form of sulphuretted hydrogen. Having said so much respecting sulphur, you will perhaps inquire why I prescribed the bark? It is not easy to give a satisfactory explanation of this; but we know, from experience, that in cases of rheumatism, after fever and local inflammation are removed, bark and other tonics have been found extremely valuable. The cream of tartar is given with a view of tempering the other stimulant remedies, it being known to possess cooling and aperient properties. The whole form a combination which is similar in its composition to a well-known popular remedy for rheumatism — the Chelsea Pensioner.

Having thus explained the general tendency of these medicines, and mentioned that they are to be made up into an electuary, it only remains to speak of the effect produced, and the dose or quantity to be given. I have stated that the ordinary dose is a teaspoonful three times a day; this, however, will be too much for some, and too little for others. The object in every case should be to keep up a mild but steady action on the bowels, and to procure a full alvine discharge at least once a day. If the dose mentioned already does not answer this purpose, it must be increased; if the bowels are too free, it must be diminished. You should never omit making regular inquiries after the state of the bowels, while the patient is using this electuary; for if these matters are neglected, the patient will not obtain the full benefit to be derived from it. Besides opening the bowels, this electuary acts on the skin, and frequently causes a rapid disappearance of the disease. I need not

say that, in addition to this, I ordered warm baths; they coincide in effect with the electuary, acting on the skin, and tending to relieve the rheumatic pains.

There is another very remarkable case bearing some affinity to the preceding, on which it may be necessary to offer a few remarks; I allude to the patient with sweating arthritis, to whom I drew your attention this morning. This poor man, who is somewhat advanced in life, has been labouring for several months under inflammation of the joints of a rheumatic character, manifesting itself by pain, stiffness, swelling, and probably some slight effusion into the synovial membranes. These symptoms were accompanied by profuse and constant perspirations, with a tendency to diarrhoea — circumstances which caused a manifest deterioration of his health and strength; he became pale, cachectic, and emaciated. His case had been very tedious and intractable; he had been a long time in the hospital, and had used all the most appropriate remedies; but, without any appreciable improvement; his joints remained stiff, painful, and almost useless; he was greatly reduced in strength, and entirely confined to his bed. In addition to this, his pulse continued unreduced in frequency, and this is always a bad sign; cases of rheumatic arthritis, attended by prolonged excitement of the circulation and copious sweating, are generally found to exhibit an intractable chronicity, and too often terminate in rendering the unfortunate patient a cripple for life.

Now in this case many remedies had been tried without effect, and the state of the man's constitution, combined with the circumstance of his having a tendency to bowel complaint, contributed to reduce still further the scanty list of our remedial agents. Alternative remedies, to affect the general system, were almost entirely out of the question, and a vast number of local applications had proved unsuccessful. It occurred to me here, that some benefit might be derived from mercurial ointment, gently rubbed over the affected parts, assisting its action by the use of rollers applied round the joints. Fortunately, the experiment proved successful; in the course of a week or ten days, the swelling diminished considerably, the pain is nearly gone, and the power of motion is returning. His mouth has become affected, but the relief experienced appears to be proportioned, not to the influence of mercury on the general system, but to its effect on each individual joint. As a proof of this, I may state that the man has been mercurialised before, but without any favourable result.

Here, gentlemen, is an important point for consideration. A patient labours under a certain number of local inflammations, for which mercury is given internally, so as to affect the mouth, but without any manifest improvement of symptoms; we afterwards try the same remedy in another form; we apply it locally, in the shape of ointment, rubbed into the skin over the diseased parts, and we succeed in giving relief. This is a fact deserving of attention. You will perhaps ask me to explain this — I cannot do it; but I can

bring forward many other analogous examples. If you refer to Mr. M'Dowell's valuable paper on *Erysipelas*, published in a late number of the *Dublin Medical and Chemical Journal*, you will find that many cases of this affection derived great benefit from the use of mercurial ointment; in fact, much more than they could by giving mercury internally. In the next place, I have met with many cases of enteritis and peritonitis, where the disease continued after the system became affected by mercury; and I have observed that these cases yielded rapidly to blistering the abdomen, and dressing the raw surfaces with mercurial ointment. Dr. Marsh and I attended a young gentleman lately, who had low fever, accompanied by a quick but feeble pulse, and great restlessness. About the tenth day, his belly became tender and exquisitely painful; he had thirst, diarrhoea, and other symptoms of enteric and peritoneal inflammation. Before his illness, he had been of rather delicate habit, and had further impaired his health by close study. He was therefore unfit for depletion, and of this we were convinced by the debility which followed the application of a few leeches. Under these circumstances, we ordered a large blister to be applied to the abdomen, and the vesicated surface to be dressed with mercurial ointment. This proved eminently successful; the peritonitis, enteric irritation, and fever, soon disappeared, and the young gentleman recovered completely. The same thing is seen in many cases of pleuritis; the constitutional effect of mercury will fail in removing the affection of the pleura until it is applied locally. I might also refer to instances of common inflammation of the testicle, in which mercurial ointment, smeared over the part, has been found decidedly beneficial. It is unnecessary for me, however, to multiply examples; what I have stated give ample proof of the utility of mercury applied locally. When I was a student, it was the fashion to scout the doctrine that any distinct effect could be produced by the local application of mercury; our teachers laid it down as an axiom, that, to produce any sensible effect, it was necessary that it should first enter the system through the lymphatics. Thus, when you rub mercurial ointment over the liver to remove hepatic derangement, they said, before it could exert any influence on the liver, it had to pass along the thoracic duct, become mixed with the circulation, and manifest its peculiar action on the whole economy. Hence, in a case of hepatitis or testitis, it was deemed useless to apply mercurial ointment over the liver or testicle, since it had, as they expressed it, to go its rounds through the whole system, before it could affect either of these organs. This reasoning has an appearance of plausibility, but it is contradicted by facts. Numerous examples might be cited to prove that the greatest advantage may be derived from the local application of mercury, independent of any effect produced by it on the general system. How often do we see an incipient bubo dispersed by mercurial frictions, before any constitutional effects occur? How frequently do we see laryngeal and hepatic inflammation relieved

by the use of mercurial ointment without salivation? Do the beneficial effects, which we so often observe from the emplastrum ammoniaci cum hydrargyro, depend necessarily upon the mouth being affected? Is the relief which follows the use of mercurial ointment in erysipelas or testitis, unattainable unless preceded by mercurial action in the whole system? Indeed, any person who reviews this subject dispassionately, will see that the doctrine of a preliminary constitutional affection being absolutely necessary, in order to obtain the specific action of mercury on any particular organ, is wholly untenable; while, on the other hand, there is a host of evidence to prove that, locally applied, it produces a primary and distinct effect, totally independent of its action on the general economy.

The last case to which I shall direct your attention, is one of syphilitic iritis. A young man has been admitted this morning, presenting symptoms of secondary syphilis in a well marked form, but simple and uncomplicated by any previous treatment. He took no medicine for the primary or secondary symptoms, except two pills, which he got at a dispensary about two months ago, and which were not followed by any sensible effect. The secondary symptoms came on with pains and feverishness, and are at present extensively diffused over his body in the form of elevated blotches, of a character intermediate between the papular and squamous. About four or five days back, he was advised to take a warm bath for his pains, but having to walk a considerable distance afterwards, the day also happening to be chilly and sharp, he got cold in returning home, and soon after experienced pain in the left eye, with lachrymation, and diminution of the power of vision. Had he been exposed in the same way while in health, he would probably get slight conjunctivitis, or sore throat, or bronchitis; but the case was altogether different with a man labouring under a constitutional affection, having a tendency to manifest itself in almost every tissue of the body, and prepared to modify every form of inflammation to which accident might give rise. Again, if the man's constitution was in a sound state, his feverish cold, or conjunctivitis, or sore throat, could be removed by very simple means, such as bathing the feet, taking a little warm whey on going to bed, and some opening medicine the next morning. But here the state of the constitution occasions the substitution of syphilitic iritis for simple conjunctival inflammation, and demands a peculiar plan of treatment. You are all aware that persons who have taken mercury for syphilis, without being entirely cured, are very liable to get iritis on slight exposures. Some persons attribute this entirely to the mercury; but mercury, in such cases, merely acts by rendering the patient more liable to cold, so that when iritis occurs in a patient who has been under a mercurial course, it is not in consequence of the direct operation of mercury, but by its increasing his liability to be affected by impressions from cold. For the same reason, the circumstance of his having taken mercury before is

not, as some persons maintain, any argument against his using it a second time.

On examining this man, we found that he had some pain referred to the eyebrow; the eye also is more vascular than natural, and presents that appearance which is so characteristic of iritis; there is some alteration in the colour of the iris along its free margin, but no irregularity of pupil. Along with these symptoms, there is dimness of vision, and objects appear as if seen through a veil. This arises not from any opacity of the cornea, or opalescence of the aqueous or vitreous humours, but from inflammation affecting the iris, ciliary zone, and, probably, the coats of the retina. In such cases, where the inflammation spreads from the iris to the ciliary zone, it would appear that the ciliary nerves and retina partake in the mischief, for vision becomes affected before we can discover any appearance of derangement in the optical instrument. The peculiar appearance of the eye in this man, the change of colour in the free margin of the iris, and the diminution of the power of vision co-existing with an eruption of the skin, point out the nature of the disease, and show that the affection of the eye, though proceeding from a common cold, has been modified by the syphilitic taint in the constitution.

We next come to consider the plan of treatment to be pursued. In order to prepare his system for mercury, I have ordered him to be blooded, purged, and put on the use of antimonials for two or three days. Venesection, purging, and tartar emetic, may be of some use in relieving or arresting the symptoms of iritis, but I do not place any great reliance on them for removing the disease; I merely employ them as auxiliaries, depending on mercury for the cure. Here it may be necessary to observe, that there is considerable variety in cases of iritis. Some are extremely mild; there is no palpable sign of acute inflammation present, and the chief symptom is diminution of the power of vision. Such attacks are sometimes not perceived by the patient until some accident informs him that the sight of one eye is nearly gone. In other cases, after reaching a certain point, it begins to decline, and frequently terminates spontaneously. Others present symptoms of a more decided character, but still are free from danger. Every attack, however, where the inflammation is at all of an intense character, will go on to destroy vision, unless met by prompt and efficacious treatment. In this man's case the symptoms are not very acute, and hence there is no necessity for having recourse to mercury at once; the disease might certainly terminate in disorganisation of the eye, but it would be some weeks before this would be accomplished. On the other hand, there are cases which, if neglected, would destroy vision irretrievably in the space of three or four days. Such cases require extremely prompt and energetic measures. But where iritis is not of a violent kind, you need not depart from the plan of treatment you would have laid down for the cure of syphilitic affections where no iritis existed. Here you bleed, purge, give an-

timonials and mercury, and you find that the syphilitic eruption and iritis disappear together. But where the symptoms of iritis are so severe as to threaten rapid disorganisation of the eye, you disregard the syphilitic affection, and direct your entire attention to the preservation of the eye. Here you bleed, leech, apply belladonna to the eye, and give calomel, in doses of ten grains or a scruple, every third or fourth hour, so as to bring the system as rapidly as possible under the influence of mercury.

With respect to belladonna, I believe you are all aware of its value in iritis. Some think that its action is merely mechanical, that it dilates the pupil and no more; but I am firmly convinced that its influence is not limited to mere dilatation of the pupil. I believe that it acts on the vitality of the eye, and that when employed externally or internally, it possesses the properties of diminishing the irritability of that organ, and thus tends indirectly to remove local inflammation. In scrofulous ophthalmia, where the eye is exquisitely sensible, where the slightest exposure to light causes intense pain, and copious lachrymation, one of the best remedies I am acquainted with is belladonna, given internally. Thus, you perceive that belladonna has not only a mechanical action, producing dilatation of the pupil, and tending to prevent adhesions, but also, by its influence on the retina and ciliary nerves, diminishes the irritability of the eye, and aids materially in effecting the removal of local inflammation.

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## LECTURE VII.

General remarks on the pathology of paralysis—Dr. Graves's new views upon this subject—Their application to the study of several varieties of paraplegia—Explanation of Mr. Stanley's cases of paraplegia; of Dr. Stokes's cases—Two cases of paraplegia after enteritis—Paraplegia after metritis—Paraplegia the consequence of poisoning by lead; by arsenic—Paraplegia arising from irritation of the urethra (case communicated by Dr. Hutton).

HAVING recently met with some very interesting and remarkable cases of impairment of the muscular functions of the lower extremities, I am anxious to offer a few observations on paraplegia, particularly while the subject is still fresh in my mind: we can resume the consideration of our clinical cases at a future opportunity. I would entreat your favourable attention on this occasion, while I lay before you some opinions on paraplegia peculiar to myself, and differing from the views entertained by the generality of medical writers; the subject, too, is one of extreme interest, involved in much obscurity, and offering an extensive field for investigation: I trust, however, I shall be able to communicate some new matter, calculated to throw much additional light on the nature of this affection, and thus contribute to fill up the blanks which exist in an important department of pathological medicine.

You are aware that by paraplegia is meant that species of paralysis in which the lower extremities are affected — a paralysis frequently embracing loss of motion and loss of sensation in the lower extremities, accompanied in many instances with derangement of the motor power of the bladder and rectum. Now, I wish you clearly to understand that it is not my intention to describe the symptoms, or discuss the causes, of those species of paraplegia which are well ascertained, and of which you will find satisfactory descriptions in your books: under this head may be classed all those cases which are produced by disease of the spinal marrow, its membranes, the vertebræ or their appendages, their ligaments, and diseases directly affecting the great nerves which supply the lower extremities. All these matters have been sufficiently studied, and require no additional observations from me; my object is to elucidate some of the obscurer varieties of paraplegia. I have touched on this topic before in my lectures delivered at the Meath Hospital, but since that time I have met with many cases, and made inquiries which tend to throw additional light on the subject. I have read, with the attention which it merits, a lecture on this subject, published by my colleague, Dr. Stokes, in Renshaw's *London Medical and Surgical Journal*, and also Mr. Stanley's interesting cases in the 18th volume of the *Medico-Chirurgical Transactions*, published in the year 1833. In Mr. Stanley's paper, several cases of paraplegia are brought forward, the explanation of which had not been understood before or even at the time he wrote, but which I had given several months previously, as applied to paralysis in general, in two lectures in the 58th and 59th numbers of the *London Medical and Surgical Journal*, and which had been delivered at the Meath Hospital, in Nov. 1832, and were published immediately afterwards. In fact, the explanation offered by Mr. Stanley is merely a corollary of the propositions which I laid down at that time, and which I shall beg leave to repeat here.

Before I commenced my investigations on the subject, pathologists, in endeavouring to ascertain the causes of paralysis, sought for the sources of the disease almost solely in the centres of the nervous system. They looked for the causes of paralysis in the brain or spinal cord, where they supposed it originated either in organic or functional derangement of these important organs. In the lectures to which I have already referred, I showed that this mode of accounting for all forms of paralysis, by referring them to original disease of the nervous centres, was in many instances incorrect, and proved, I think to the satisfaction of the class and those who read the lectures, that a most important and influential cause of paralysis had been hitherto nearly overlooked — a cause which, commencing its operation on the extremities, and not on the centres of the nervous system, might, by a reflex action, produce very remarkable effects on distant parts. I brought forward on that occasion many arguments, facts, and cases, to prove the possibility of such an occurrence — to show that it frequently happens that im-

pressions made on the extremities of the nerves will generate a morbid action in them; that this morbid action will be conveyed along their branches and trunks to the spinal cord or brain; and that, continuing its propagation, it may, by a retrograde course, be carried thence along the nerves to distant organs, and in this way give rise to disease in parts originally intact and healthy. I brought forward several instances to prove that, when a certain portion of the extreme branches of the nervous tree has suffered an injury, the lesion is not confined merely to the part injured, but in many instances is propagated back towards the nervous centres; and that, in this way, not only the nervous filaments of the injured part may be affected, but also the main trunk of the nerve and other branches, or that the lesion may reach the brain or spinal cord, and thus produce still more extensive effects on the system. What I endeavoured to impress upon the class at that time was, that pain, numbness, spasm, and loss of the power of muscular motion, may be produced by causes acting on the extremities of the nerves; and that such affections, commencing in the extremities of the nerves, may be propagated towards their centres so as to be finally confounded with diseases originating in the centres themselves. For a detailed account of my views on this subject, I beg leave to refer to the published lectures; at present I shall content myself with recapitulating a few of the facts on which these views were grounded.

If you place your hand in snow or ice-cold water, you will find that it is not merely the parts subjected to the influence of cold that become numb, and that the diminution of power is not entirely limited to the muscles concerned in the peculiar motions of the fingers, but extends also to those of the fore-arm, by which the principal motions of the hand are performed. Here the impression of cold is found to affect not only the parts immediately exposed to it, but also parts that are quite removed from its influence and warmly covered. We see that not only the muscles attached to the fingers, but also those of the fore-arm, undergo from this cause a temporary paralysis. Now, if a cause of a trifling nature, and acting only for a time, can, when applied to a part, produce loss of power in another and more central part, we may infer that the same cause acting permanently might produce permanent paralysis of the latter. We can, therefore, conceive how in this case the agency of cold might travel upwards and reach the muscles of the arm also, and thus we should have a change, commencing in the tip of the fingers, propagated to parts at a considerable distance from the situation of the original lesion. Again, we find that an injury, affecting one branch of a nerve, will be propagated by a retrograde action so as to affect another and distinct branch, as was exemplified in a case mentioned in my former lectures on paralysis. A young lady, having wounded the inside of her ring-finger with a blunt needle, observed that she had, in consequence of the injury, a considerable degree of numbness, not only in the wounded finger,

but also in the little finger next to it. Here we find that an impression made on the nerve of one finger not only affects that finger, but also travels backwards so as to operate on the branch given off by the ulnar nerve to supply the little finger — *and given off, observe, above the place of the wound* — so that the phenomena were identical with those which would arise from an injury inflicted on the branch which supplied both fingers. Within this last month, I have had an opportunity of witnessing a very striking fact of this nature. A young gentleman, distinguished for the extent of his classical and mathematical acquirements, and who had just succeeded in obtaining the senior wranglership, swallowed a small but angular piece of chicken-bone. It lodged low down in the œsophagus, and was not pushed, by means of a probang, into the stomach until after the lapse of more than an hour. Considerable inflammation of the pharynx, œsophagus, and surrounding tissues, was the consequence; on the third day of his illness he got a violent, long continued, and ague-like rigor, which terminated in a profuse perspiration, and ushered in a well-marked inflammation of the neck of the bladder. In the next place, we find that impressions affecting the frontal branches of the fifth nerve may, by a reflex action, operate on the retina so as to cause blindness. Here the morbid action travels from the circumference towards the centre, and is again reflected towards the circumference so as to affect a separate and distinct part. Of this I lately saw a curious and instructive example. A medical student, travelling through Wales on the outside of the mail, was exposed for many hours to a keen northeasterly wind blowing directly in his face. When he arrived at the end of his journey, he found that his vision was impaired, and that everything seemed as if he was looking through a gauze veil. There was no headache, no symptom of indigestion, to account for this evidently slight degree of amaurosis, and yet he was recommended to use cupping to the nape of the neck, and strong purgatives. When he consulted me, which he did in the course of a few days afterwards, I at once saw that there was something unusual in the case, and, after a careful examination, I at length elicited from him the fact of his having been exposed to the influence of the cold wind. It was now apparent that the retina suffered in consequence of an impression made on the facial branches of the fifth pair. The cure was effected, not by a treatment directed to relieve cerebral congestion, but by stimulation of the skin of the face, forehead, temples, &c.\*

It is, however, unnecessary to multiply examples to prove the truth of the proposition, that disease may commence in one portion of the nervous extremities, and be propagated towards the centre,

\* [I once saw a similar case, in which hemiplegia followed the exposure of the part affected to a very cold wind in a sleigh. It was finally cured by strychnia, which is almost never the case in hemiplegia depending upon cerebral causes. — *Ed.*]

and hence, by a reflex action, to other and distant parts. Bearing this in mind, we can explain why it is that disease commencing in one part of the system may produce morbid action in another and distinct part, and it certainly appears strange, that, with so many striking examples before them, pathologists should have so long overlooked this cause, when seeking to explain the nature of many forms of paralysis. If certain irritations of the nervous extremities in one part of the body are capable of giving rise to a derangement in the whole system of voluntary muscles; if a local affection may become the cause of exalting and rendering irregular the functions of every muscle in the body; then, surely, it is not difficult to conceive that a cause, local as the former, and tending not to exalt but to depress the motor function of the muscles, may likewise affect not merely the nerves and muscles of the part, but also those of the whole body, or of distant organs, giving rise to paralysis. Now, pathologists have long recognised the fact that general muscular excitement and spasm may arise from the operation of a local irritation. A man gets a contused wound on his thumb, or one of his fingers, and some superficial nerves are injured. In the course of a few days he begins to feel a degree of stiffness about the lower jaw and muscles of the neck, accompanied by a sense of constriction about the diaphragm. This increases gradually, all the voluntary muscles are thrown into a state of fixed spasm, and he gets tetanus. Here a few trifling branches of the digital nerves are injured, the morbid action is conveyed from them along the nerves of the arm to the spinal cord and brain, and is thence, by a reflex action, propagated all over the body. A wound of the finger causes a morbid action in its nerves, and it has been acknowledged by pathologists that this, by acting on the brain and spinal cord, may give rise to a general morbid action of the muscular system. This being the case, there is nothing improbable in supposing that a cause affecting any portion of the branches of the nervous tree, and which produces effects of a paralytic nature, may likewise react backwards towards the nervous centres, and thence by a reflex progress may extend its influence to distant parts of the circumference.

To give another instance: how often do we see irritation, commencing in the intestinal mucous membrane, propagated backwards towards the brain? Take the familiar example of intestinal worms. A child labours under worms; here the irritation of the digestive mucous surface, whether it be produced by the worms, or by the indigestion which accompanies them, is propagated from the stomach and bowels to the brain, and thence reflected to the voluntary muscles, causing general convulsions.

Dr. William Stokes details the following case in his lectures. "A young woman was admitted into one of the surgical wards of the Meath Hospital, for some injury of a trivial nature. While in the hospital, she got feverish symptoms, which were treated with purgatives, consisting of calomel, jalap, and the *black bottle*, a

remedy which deserves the name of coffin bottle, perhaps, better than the pectoral mixture so liberally dealt out in our dispensaries as a cure for all cases of pulmonary disease. She was violently purged, the symptoms of fever subsided, and she was discharged. A few days afterwards, her mother applied to have her readmitted, and she was brought in again, and placed in one of the medical wards. Her state on admission was as follows:— She had fever, pain in the head, violent contractions in the fingers, and alternate contraction and extension of the wrist and fore-arm. These muscular spasms were so great, that the strongest man could scarcely control the motions of the left fore-arm. In addition to these symptoms, she had slight thirst, some diarrhoea, but no abdominal tenderness. On this occasion, a double plan of treatment was pursued, the therapeutic means being directed to the head, in consequence of the marked symptoms of local disease of the brain, and to the belly, from the circumstance of abdominal derangement observed in this and her former illness. She died shortly afterwards, with violent spasms of the head and fore-arm; and as she had presented all the ordinary symptoms of a local inflammation of the opposite side of the brain, we naturally looked there first for the seat of disease. After a careful examination, however, no perceptible trace of disease could be found in the substance of the brain, which appeared all throughout remarkably healthy. She had all the symptoms which, according to Serres and Foville, would indicate disease of the optic thalamus or posterior lobe of the opposite side, yet we could not find any lesion whatever of its substance, after the most careful examination. But on opening the abdomen, we found evident marks of disease; *the lower third of the ileum, for the length of six or eight inches, was one unbroken sheet of recent ulcerations.*\* This case, gentlemen, you will perceive just now, bears very strong on the subject of paraplegia arising from enteritis.

Again: how often do we see convulsions brought on in the same way by cutaneous irritation? A child gets an attack of fever, accompanied by general irritability and restlessness. During the course of the disease, the lungs become affected, and the medical attendant applies a large blister, which is left on for several hours. Next day the symptoms of nervous irritation become more violent; the child is perfectly restless, or, if it dozes for a moment, awakes screaming, and is finally attacked with general convulsions. Many other examples could be brought to support this view of the question, and prove that morbidly increased action of the whole mus-

\* [It was evidently a case of typhoid fever, or dothinerteritis, which was masked by the cerebral symptoms to which the attention of the physician was directed. I have never seen a case in which the spasms were limited to the fore-arm of one side only; but I once met with one in which the patient, a young woman, laboured under severe and general spasms with delirium which closely resembled hysteria; this was a latent case of typhoid fever like that mentioned by the lecturer.—*Ed.*]

cular system may be excited by a cause acting merely on some insulated portion of the nervous extremities.

I think, therefore, that I am borne out by analogies strikingly exhibited by numberless examples, in asserting that the circumference of the nervous system has been too much neglected by pathologists, in their explanations of the nature and causes of paralytic affections. I could give many instances of pains commencing in particular parts of the body, and traveling back towards the spine, so as to give rise to an affection of that organ, which has been too generally looked upon as the result of idiopathic disease. How often does this happen in hysteria? How often does it happen that the organ primarily engaged in hysterical cases becomes, during the attacks, acutely painful, and that, as the disease proceeds, the pain travels back towards the spine, until at length the spinal cord itself becomes affected, and we find acute pain and tenderness over some portion of its track? I am fully persuaded that many modern authors, who have ascribed the phenomena of hysteria and other affections to spinal irritation, have been too hasty and indiscriminate in their explanations. In the majority of cases, you will find hysterical patients complain at first, not of pain in any part of the spinal cord, but in the right side in the situation of the liver, in the region of the heart or stomach, or in the head, or the pelvic region. At this period there is seldom any tenderness over the spinal cord; but, as the disease goes on, the irritation which existed in some of those situations to which I have referred, is extended to the spine, and pain and tenderness are now felt over some of the spinous processes of the vertebræ. When this has taken place, then the spinal irritation thus produced becomes itself a new cause of disease, from which, as a centre, the morbid influence is propagated to other organs. The profession owe much to Teale, Griffin, and other writers, who have pointed out the importance of attending to this spinal tenderness in cases of hysteria, &c. Still, however, like all those who have been employed in investigating a new subject, they have perhaps generalised too hastily, and have, in many cases, regarded this spinal tenderness as a cause, when it should have been merely considered as a consequence.

Having thus endeavoured to explain some of the general principles which should guide us in the investigation of nervous diseases, I shall relate some cases of paraplegia, which, though differing in their origin as to the organ inflamed, will strike you as exhibiting a close analogy to those published by Mr. Stanley. "In November, 1832, I attended, with Mr. Kirby and Mr. Cusack, a young gentleman, aged fourteen, who was residing at a boarding school in the vicinity of Dublin. He had eaten a large quantity of nuts on the eve of Allhallows, and had, in consequence, obstruction of the bowels, attended with sense of weight and pain of the stomach, nausea, loss of appetite, and obstinate constipation. Active purgatives, of different kinds, were employed without effect, and the obstruction was only removed by the use of repeated enemata,

thrown up with Read's syringe, introduced as far into the cavity of the intestine as the circumstances of the case permitted. To these means, assisted by leeching and stuping, the constipation yielded; but its removal was followed by symptoms of enteric inflammation, embracing not one, but all the coats of the intestine — the mucous, the muscular, and certainly the peritoneal. The occurrence of a new and violent disease greatly impeded his cure; we had a long and anxious attendance, and the young gentleman escaped with great difficulty. However, the enteric symptoms at length gave way, convalescence became manifestly established, the patient was able to sit up in his bed, and as his strength and appetite were rapidly returning, he was informed that he might get up. On attempting to leave his bed, it was found that he had lost the power of using his lower extremities — in fact, he had become paraplegic. He had perfect power over his arms and trunk, but the lower extremities were quite useless. The paralysis, however, was entirely limited to the muscles; there was no diminution of sensibility in the limbs; no numbness, pain, or sensation of formication; and the muscular functions of the bladder and rectum were, apparently, uninjured.

Before I enter on the explanation of this case, permit me to recite the following: — In the month of November last, I was called to visit a lady residing in the neighbourhood of Merrion square, who was said to be labouring under symptoms of dyspepsia. She had a sense of weight about the stomach, nausea, tendency to vomit, epigastric and hypochondriac tenderness, (the latter situated in the right side,) but no fever or excitement of the circulation. In the course of two or three days, she became slightly jaundiced, and it was evident that the latent cause of her disease was, in all probability, a gastro-duodenitis terminating in an affection of the liver. It is sufficient to say that this lady's symptoms went on, and that the diseased action gradually extended to the whole intestinal tube, liver, and peritoneum. Her bowels became tympanitic, her belly extremely tender on pressure, she got low fever, with quick pulse and great restlessness, and was saved with difficulty by the repeated application of leeches, and the use of calomel so as to affect the mouth. She became convalescent; but with the return of health, it was found that she had lost the power of using her lower extremities. She still continues paraplegic.

In the case of the young gentleman already detailed, you will recollect that the paralysis was entirely limited to the muscular functions of the lower limbs, and that there was no derangement of sensation, no lesion of the muscular powers of the rectum and bladder. The same thing occurred in this case. There was in the beginning no impairment of sensibility, and the power over the rectum and bladder was uninjured. "Within the last three weeks, however, she has complained of pain in the loins and bowels, and the muscular functions of the bladder are becoming deranged."\*

\* This sentence was inserted on the 23d of March, 1835. Mr. Carmichael and Dr. Nalty have seen this lady repeatedly.

Indeed, the case is rather unfavourable ; it has resisted the ordinary remedies, and threatens to become one of confirmed paraplegia. It is to be observed, that in this lady the loss of power was much more complete than in the young gentleman before referred to ; his paraplegia was by no means perfect, and yielded to the employment of stimulating frictions to the extremities, combined with a cautious use of internal stimulants and tonics. In neither of these cases was the loss of muscular power so great as to deprive the patients of the use of their legs while lying in bed. They could then be raised, flexed, and extended with apparent ease and strength ; and yet, when the patient attempted to stand up or walk, he was totally unable to do either, his legs sinking under him ; and even when supported by a person at each side, so as to take the greater part of the weight of the body off the limbs, he was still unable to advance one foot before another. I cannot understand why so great a difference should exist between the muscular force of the legs in the one position and in the other.

Here, you perceive, we have more or less complete loss of power of the lower extremities, supervening on inflammation of the gastro-intestinal mucous surface. Of this I have now witnessed several examples. How are we to account for this ? In what way does paraplegia arise from inflammation of the bowels ? The mode in which I would explain this phenomenon is as follows :—The impression made by inflammatory derangement on the nervous filaments distributed to the mucous coat of the intestines is propagated to the spinal cord, and from this reacts on the muscular functions of the lower extremities. It is true that the intestines, and most of the abdominal organs, are almost exclusively supplied with nerves from the great sympathetic ; but you are to recollect that these communicate by numerous branches with the spinal nerves, and that, consequently, morbid impressions made on their extremities may be rapidly and extensively propagated to the spinal cord, and from thence by a reflex action to the muscular nerves of the lower extremities. When I first met with cases of paraplegia after inflammation of the bowels, or fever with gastro-enteric symptoms, I thought that, owing to some peculiarity in the case, the great lumbar nerves had become implicated in the disease ; that there was an actual inflammatory state of the neurilema, accompanied by thickening and effusion, which, by compressing the nervous matter, gave rise to the paraplegic symptoms. A more extensive review of the subject, however, has convinced me that this is not the fact ; for, if it were, the affection of the nerves would naturally be attended with acute pains shooting in the direction of their course—for, as far as my experience goes, in every instance of inflammation attacking the neurilema, intense pain is felt in the parts to which the branches of the affected nerve are distributed. Again, though this explanation might apply to cases in which the inflammation was general—as where enteric is combined with peritoneal inflammation—it would not apply to those cases in which the inflam-

matory action is localised. Thus, in Mr. Stanley's cases, the paraplegia supervened on inflammation principally limited to the kidneys. In seven cases detailed in Mr. Stanley's paper, we find paralytic symptoms produced, not by any derangement commencing in the brain or spinal cord, but in consequence of an irritation having its seat and origin in the kidneys; and yet, in the majority of his patients, the paraplegia was as complete as if it had been produced by idiopathic disease of the cord or its investments. What was equally remarkable, many of those cases were accompanied by spinal tenderness; so that the most experienced practitioners, on a review of the symptoms, were inclined to look upon them as cases of disease affecting the vertebrae, or the spinal cord and its sheath. Yet on dissection there was no caries of the bones; no destruction of ligaments; no remarkable vascularity, softening, or suppuration of the spinal cord; no inflammation of its membranes, or effusion into its sheath. In almost all, the morbid phenomena were confined to the kidneys; there were depositions of pus dispersed through their substance, and the mucous lining of the infundibula, ureters, and bladder, was thickened and vascular. The formation of purulent matter was not, however, connected with the paraplegia further than as being, like it, produced by the same cause—inflammation of the kidney. In one case the paraplegia was very complete, and yet the inflammation of the kidney had not advanced to the stage of suppuration.

There can be little doubt that others have frequently noticed the occurrence of paraplegia after inflammation of the bowels, although no author has as yet written upon the subject. It is well to be acquainted with the occasional occurrence of so untoward and obstinate a sequela of enteric inflammation, in order that we may watch attentively the state of the lower extremities immediately after the inflammation of the bowels has been subdued. As the patient, in such cases, has no pains in his limbs, and is not conscious of any loss of power until he attempts to stand up—and as this attempt is not usually made for many days after the subsidence of the inflammation of the bowels, in consequence of the great debility which the disease and the active treatment necessarily resorted to produce—this variety of paraplegia is very liable to be overlooked in its commencement, and is thus neglected at the very period when treatment is almost likely to prove beneficial. The foregoing observations have, no doubt, excited a suspicion in the minds of some of you, that the paralysis so often observed to follow painter's colic may be derived from a reaction of the nervous system of the bowels on that of the muscular system in general. Dr. Bright, indeed, has asserted that inflammation of the spinal marrow or sheath, as denoted by spinal tenderness, always precedes the paralysis produced by lead. It often does, but by no means constantly; for I have pointed out to you several cases in this hospital in which not the slightest vestige of spinal tenderness could be detected either before the commencement, or during the progress, of the paralysis

which so often follows painter's colic. I am not inclined to adopt the supposition that the paralysis in such cases is merely secondary, and the result of the intestinal irritation. I think it much more probable that it depends on the poisonous effects of the lead acting directly on the nervous system. The same observation applies to the paralysis which so often occurs as a result of large doses of arsenic. Orfila has remarked that some of the dogs he experimented on, and which narrowly escaped dying in consequence of large doses of arsenic, became, when they recovered from the immediate effects of the poison, permanently paraplegic. I look upon this paralysis as a direct consequence of the deleterious action of arsenic on the nervous system, and not as the result of the gastro-enteritis it invariably produces. The fact, however, is well worthy of attention, that both arsenic and lead produce intestinal irritation in the first instance, and loss of muscular power in the second. A knowledge of this fact will prepare us for understanding the connection which appears to exist between intestinal irritation and paralysis.

In a lecture published by my colleague, Dr. William Stokes, in the 137th number of the *London Medical and Surgical Journal*, he makes the following observations, which I shall beg leave to quote: — "Here, then, we have well-marked paraplegia without any perceptible organic change in the spinal cord or its investments, but presenting distinct traces of disease in the kidneys. This leads me to observe the very close connection which exist between the kidneys and spinal cord—a connection which has been long recognised by medical practitioners, but only in a limited point of view; for, though they were of opinion that disease of the kidneys and a discharge of ammoniacal urine were the results of spinal disease, they never seem to have reflected that the reverse of this might happen. It seems, however, now to be almost completely established, that disease of the kidneys may produce symptoms which are referable to disease of the spine. Medical men have been too much in the habit of looking at this matter only in one point of view. They know that disease of the spine will produce disease of the kidneys, and here they stop; but it has been shown that the reverse of this may happen, and that renal disease may produce very remarkable lesions in the functions of the spine. Of this very curious occurrence we have many analogies in pathology. Thus, for instance, in several cases of cerebral disease, but particularly in hydrocephalus, we have vomiting; here we have functional disease of the stomach depending on disease of the brain. Take the reverse of this,—observe the delirium which attends a case of gastro-enteritis; here you have the functions of the brain deranged in a most remarkable manner, and this produced by sympathy with an inflamed mucous membrane. The truth is, that in the spine and kidney, as well as in various parts of the body, we may have two organs so closely connected in sympathy, that disease of the one will bring on serious functional lesion of the other."

It will be seen that these observations coincide, in many points, with the principles I have laid down in the published lectures which I delivered on the subject of nervous pathology, and to which I have already referred. On this point Mr. Stanley makes the following remarks : — “ In reflecting on the phenomena of the first series of cases which have been detailed in this paper, it might be thought improbable that irritation, commencing in the kidney or in the bladder, should be propagated through sentient nerves to the spinal cord, and that the impression should thence be transmitted through both the motive and sentient spinal nerves to the limbs — here occasioning an impairment both of sensation and of the power of motion. Some illustration of this subject seems to be furnished by the researches of experimental physiology. If, in an animal, “ a few seconds after it has been deprived of life, the spinal cord be then divided in the middle of the neck, and again in the middle of the back, upon irritating a sentient organ connected with either isolated segment, muscular action is produced — that is to say, a sentient organ is excited — and an irritation is propagated through the sentient nerve to the isolated segment of the spinal marrow, where it gives rise to some change, which is followed by an impulse along the voluntary nerves to the muscles of the part.”\* In the instances which have been adduced, irritation, commencing in the nerves of an internal organ — the kidney — has been transmitted through the spinal cord to the motive and sentient nerves of the lower extremities; but the same phenomena may occur in an opposite order, as in the case of a compound fracture or other severe injury of the lower extremity, followed by retention of urine from irritation arising in the anterior crural and ischiatic nerves, and communicated through the lumbar and sacral plexuses of spinal nerves to the nerves of the bladder. Extending these views to cases of neuralgia where there is no visible derangement of structure or other local cause of excitement, it will always be difficult to determine whether the source of irritation be in the affected nerves, or in the central portion of the nervous system whence they are derived.”

You will perceive that this explanation, as far as it goes, though not in the same words, is in meaning the same as that which I have given, with this exception — that it is only a corollary of the general principles which I had laid down in my lectures on the pathology of the nervous system. Long before the publication of Mr. Stanley’s paper, I had established the proposition that impressions made upon any portion of the nervous extremities may be propagated towards their centres, and thence by a reflex action transmitted to the nerves of other and distant parts, so as to give rise to morbid phenomena analogous to those which are produced by disease originating in the central parts themselves. Applying this principle to the subject of paraplegia, we shall find that, inde-

\* Outlines of Human Physiology, by H. Mayo.

pendently of cerebral or spinal disease, it may arise from a variety of causes, each referable to lesions commencing in distinct and isolated portions of the nervous extremities. Thus, in Mr. Stanley's cases, the exciting cause seems to have originated in the urinary system; in the cases which I have detailed, where it supervened on inflammation of the bowels, it commenced in the digestive (and it appears, from a communication made to Mr. Stanley by Mr. Hunt, of Dartmouth, that the same thing may result from irritation existing in the uterine) system. Mr. Hunt alludes to several cases of disease of the uterus being followed by such loss of power in the lower limbs, that the patients were entirely confined to bed; adding that there was no change of structure in the parts to which the symptoms referred as the source of irritation. In addition to these, I shall in my next lecture bring forward several cases to prove that a similar loss of power may be produced by the action of cold on the lower extremities. Indeed, the number of cases which I have recently met with, where paraplegia was evidently brought on by exposing the lower extremities to cold and wet, has very strongly directed my attention to this form of the disease; and I trust I shall be able, at our next meeting, to communicate some very interesting matter on the subject.

I shall conclude this lecture by reading the following case, for which I have been indebted to the kindness of my friend Dr. Hutton.

"Richard McNab, a sailor, aged thirty-eight, was admitted into the Richmond Hospital on the 16th of January, 1835, and placed under Dr. Hutton's care. His previous history was briefly as follows:—In the summer of 1826 he strained his back in leaping and was confined to bed in consequence of the accident, but recovered in about twelve days. Shortly afterwards he contracted gonorrhœa, which was attended with hernia humoralis; this yielded to repeated local bleeding, but a gleet remained, and this, after continuing for some time, disappeared under the use of sea-bathing. He then enjoyed good health, with the exception of occasional slight pain in the lumbar region, until October, 1830, when, being much exposed to cold and wet during a long and fatiguing voyage, he got an attack of piles, for which he was under medical treatment for seven months. During the continuance of this affection, he first observed a frequency in micturition, but had no retention or sensible obstruction of urine. After recovering from the hemorrhoidal attack, he enjoyed good health until September, 1834, when, coming from Cadiz to the port of Dublin in a very leaky vessel, he suffered greatly from cold, wet, and fatigue—being almost constantly engaged at the pumps, which could not be left for ten minutes at a time. In addition to this, being deprived of his usual allowance of spirits for thirty-two days, he found himself, on his arrival in Dublin, in a very weak state. He rested from his occupation for a fortnight after discharging his cargo, and states that during this time he drank from four to six glasses of whiskey daily.

He then went on board the *Elizabeth*, of London, as chief mate, but after eight or nine days his back and lower extremities became affected with pain and weakness, which increased to such a degree that he was obliged to give up his occupation on the thirteenth day. He states that, during the time his back and legs were getting weak, he was obliged to pass water about three times in an hour, which he did with pain and tenesmus. On the 1st of January the pain of his back was very severe, and he lost the use of his limbs, but not completely, for he could support himself, and even walk a little with the aid of two sticks.

"At the time of his admission he appeared somewhat broken down in his general health; he was pale, emaciated, and laboured under derangement of his digestive organs. He suffered from occasional chills, succeeded by heats and sweating, which occurred at irregular periods; he also laboured under micturition, dysuria, and the stream of urine was much diminished; the weakness and loss of power in his lower extremities as reported.

"His treatment was as follows:—First, cupping over the loins, then moxæ in the same situation; attention to his digestive organs; diluents and opiates for the urethral symptoms. On the 26th of the same month, a very close stricture was found to exist in the membranous portion of the urethra. A small catgut bougie of double length was introduced, so that one-half of it projected from the meatus; over this was滑ed a small gum-elastic catheter of ordinary length, and open at each end, until it traversed the stricture and reached the bladder; the catgut bougie was then withdrawn, and the gum-elastic catheter secured. A little constitutional disturbance followed, but soon subsided, and in a few days gum-elastic catheters of a much increased size were introduced with facility.

*"A very remarkable amendment took place in his back and lower extremities, in a very few days after the first introduction of the instrument; in fact it was almost sudden. Warm baths, friction to his limbs, &c., completed his cure. He was discharged on the 25th of February, at which time the power of his lower limbs was perfectly restored, and the symptoms affecting the urinary system had disappeared."*

You at once perceive the extreme importance of this case; it bears directly on the question before us, and proves that urethral irritation may, as well as inflammation of the kidneys, give rise to paraplegia; and it affords another striking illustration of the general proposition which I have laid down.

## LECTURE VIII.

IN my last lecture, I gave a brief summary of the opinions which I had published on the subject of nervous pathology, in the year 1833, and showed that the principles there laid down were entitled to serious consideration, as connected with the explanation of many forms of paralysis hitherto not well understood. I trust I have proved to your satisfaction, that the nervous extremities have been too much overlooked by medical writers in seeking to explain the source and origin of paralytic affections; and that many cases of loss of the power of motion and sensation can be clearly traced to the agency of causes acting primarily on the sentient extremities of the nervous system. I adduced numerous facts to show, that an impression made upon some portion of the extremities of the nerves may be propagated towards their centres, and transmitted thence to other and distant parts, producing there pain, spasm, impairment of sensibility, and diminution or total loss of muscular power. With reference to the subject of paraplegia, I cited the cases published by Mr. Stanley, and expressed my opinion, that the loss of power in the lower extremities was the result of a morbid action commencing in the sentient nerves of the kidneys, and propagated through the medium of the spinal cord to the muscular and sentient nerves of the lower limbs; and I brought forward some new cases of paraplegia, supervening on inflammation of the bowels, with the view of illustrating the principles I had already laid down.

In the next class of cases we have to consider, the cause of the paraplegia is extremely obscure—I mean those cases in which the paraplegia occurs during the course of fever. Here the other sufferings of the patient, and his general debility, attract our notice so exclusively, that the paralysis entirely escapes notice until convalescence is established—until, in fact, the patient wishes to support himself on his legs. He then finds, much to his surprise, that his limbs collapse under him, and that he has little or no power over them; this appears to him the more extraordinary on account of his having recovered a good deal of strength in his upper extremities. Thus, a Miss F. was attacked in fever, while on a visit to a friend in Dublin. She was attended by Mr. Carmichael. Her fever was protracted and severe, and exhibited during its progress well-marked symptoms of gastro-intestinal irritation and congestion, viz., tympanitis, epigastric and abdominal tenderness, &c. When her convalescence was established, her attendants found, to their great alarm, that she had no power in her legs. She complained of coldness and numbness in her lower extremities. This lady gradually recovered the use of her legs, but not until moxæ, without number, had been applied along the course of the spinal column. The cure lasted about a year. No evidence could at

any time be detected, indicating disease of the spinal bones or ligaments. Mr. Carmichael has seen several cases of paraplegia following the remittent gastric fever of children, totally unconnected with spinal disease. Such an occurrence is most usual in children of a scrofulous temperament, and is seldom, very seldom, remedied either by time or medicine. Two explanations suggest themselves as capable of accounting for the paraplegia after fever. The first rests upon the frequency of the occurrence of violent pain in the small of the back in the commencement of this disease. This pain in the back is often excruciating, and generally accompanied by proportionally violent pains in the lower extremities. I am quite as anxious to relieve the pain in the back, in the beginning of fever, as I am to remove headache; one is almost as serious as the other, for the vital importance of the spinal marrow in the economy is scarcely less than that of the brain.\*

In reference to this point of practice, I have been in the habit of using the expression, (in order to fix the attention of my pupils) that such a patient has not any pain in his head, *but he has gotten his headache in the small of his back.* Now, when headache is the prominent feature in the first stage of fever, how few will omit bleeding, leeching, cupping, cold or hot applications, &c., &c. When, on the contrary, the lumbar spinal marrow is the seat of the congestion, how generally do practitioners neglect the application of topical bleeding, and other appropriate remedies. Were such neglect of less frequent occurrence, it is probable that paraplegia after fever would not so often be met with. Some may be inclined to look for the source of the paraplegia which follows fever in the irritation of the gastro-intestinal mucous surface, propagated by a reflex progress of the spinal marrow. It is not easy to decide between these two explanations, but I confess myself more inclined to adopt the former than the latter.

I shall now proceed to lay before you some facts and cases illustrating the nature of another form of paraplegia, a form of extreme interest, from the circumstance of its being hitherto but little understood, and not mentioned by any writer I am acquainted with, as well as from the peculiar nature of its origin, and the frequency of

\* [This form of paraplegia is much less common in this country after continued than after remittent or intermittent fever. It sometimes occurs during the course of the acute disease, but much more frequently in the chronic cases in which repeated relapses have occurred. I met with one case in which the disease was speedily fatal: no examination could be made. In several other cases the disease was extremely protracted, and was always very difficult to remove entirely. It is most probable that no organic lesion exists, although it is not yet susceptible of rigid demonstration.

The most successful treatment consists in rest, repeated applications of cups to the spine, and mild purgatives during the periods of the disease in which there is often considerable febrile excitement, and afterwards moxas. The treatment therefore is essentially the same as that of inflammatory affections of the medulla spinalis. In addition to these remedies, there are many others which are more or less beneficial in the late or non-inflammatory stages of the disease; such as strychnia, electricity, &c.—*Ed.*]

its occurrence. I have, within a comparatively short period of time, met with several instances of this affection, and have some cases of it at present under treatment.

Before I enter on this part of the subject, I may be allowed to remark that, in some cases, loss of the power of motion in a limb can evidently be traced to the operation of a cause whose action is confined altogether to the surface. Thus, in the case of a woman in Sir P. Dun's Hospital, erysipelas occupied the calf and inside of the right leg, and occasioned some inflammation and tenderness along the chain of lymphatics extending to the groin, where one of the inguinal glands was slightly enlarged and painful. The erysipelas yielded to the employment of local and general remedies; but, for several days, and particularly while the disease was at its acme, she was altogether destitute of any power of motion in the affected limb; she could neither bend the leg on the thigh, nor could she raise the whole limb. This affection must have been produced by a reflex action propagated from the cutaneous branches to the larger muscular nerves. It is evident, that the muscles which move the leg on the thigh could have been affected only in this way, for they lay far above the part in which the erysipelatous inflammation existed. It is in the same way that we are to account for the paralysis observed in cases of phlegmasia dolens.

Sometimes the reverse of this happens, and a single limb becomes paralysed, on account of an injury done to one of its principal nerves by the application of sudden violence, or of pressure long continued. Thus, a case was related to my friend Dr. Brennan and myself, in which a robust gentleman, having been much fatigued during the day, fell asleep after dinner, his head resting on his arms, which were crossed on the table. In consequence of some unfortunate awkwardness in his position, one of the ulnar nerves was compressed during the time he slept, and, on awaking, his fore-arm and hand were completely powerless. Many remedies were tried in this case without success, and the paralysis continued until the day of his death, which occurred several years afterwards. A lady, not long since, was tripped in walking across the floor, and fell with considerable force. The parts which sustained the principal shock were the left hip and trochanter. From the moment of the accident, she lost all power in the left lower extremity, which remained permanently paralytic. Fracture or dislocation was suspected at first, but a minute and careful examination showed that the suspicion was groundless. No injury of the spine could be detected, and she had no numbness, pain, or formication, in the affected limb. After a month, she was placed under the judicious care of Mr. Kirby, who used every topical application likely to prove useful, but without the slightest benefit. She returned to the country, where she died shortly afterwards, quite unexpectedly, in the bloom of life, and without the occurrence of a single symptom indicative of approaching danger. No autopsy was permitted.

I shall now, with the view of illustrating the form of paraplegia

to which I have alluded, read the following very remarkable case, which I had an opportunity of tracing through all its stages, and which made a very considerable impression on me at the time. The history is chiefly derived from notes furnished by the patient himself before he became too weak to write; what relates to the latter stages of his complaint is taken from my own case-book.

Mr. B., aged twenty-three, was remarkably strong and healthy, though of a spare habit. He was able to take a great deal of exercise, capable of enduring much fatigue, and passionately fond of hunting, fishing, and shooting, particularly the latter; and, in pursuit of his favourite amusements, frequently exposed himself to wet feet during his excursions through bog lands, and when wading in the water. These habits, however, he laid aside after the occurrence of the first attack of his illness, which happened in 1829. He had for many years been of a costive habit, his bowels being frequently confined for a week at a time, but did not experience any sensible bad effects from this circumstance, and never took any aperient medicine. Since the first attack, in January, 1829, this state ceased, and his bowels became ever afterwards inclined to looseness, which always increased before the appearance of one of the attacks, accompanied by griping, nausea, and inclination to vomit. Each attack was generally preceded by a copious secretion of insipid watery fluid in the mouth, and then the characteristic symptoms of his disease commenced. These consisted in obstinate and protracted nausea and vomiting; he first threw up whatever happened to be on his stomach at the time, and afterwards everything he swallowed, whether solid or liquid. The matter ejected was at first acid and afterwards bitter, varying in colour from mucous to bilious, but being generally of a greenish and occasionally of a bluish tinge. The greenish fluid annoyed him much from its extreme bitterness, and the quantity thrown up in the course of a day varied from three to four quarts of fluid. He complained also of pain, referred to the stomach or lower part of the chest, which continued throughout the attack, being most acute at its commencement; for the last year, this sensation had passed into a feeling of painful constriction, which he described as a "contracted feeling of his inside," and compared it to something like the effects of a cord drawn tightly, so as to compress or strangulate his body exactly along the outline occupied by the insertions of the diaphragm. During the prevalence of the attack, he had profuse perspirations, particularly towards the termination of each paroxysm. The duration of the first attack did not exceed four or five days, after which, he became quite well, and continued so for six or seven months, when his symptoms suddenly returned. He began to reject everything from his stomach as before, but in the course of a few days the vomiting disappeared, and for a considerable interval he had no return of his complaint. In the year 1830, he had three attacks of a similar description; from these he recovered also completely, and without remarking any diminution of power

in his lower extremities. In 1831, however, the disease began to assume a more serious aspect; the paroxysms became much increased in severity, lasted longer, and recurred at shorter intervals. For one of these attacks he took mercury and was salivated. In 1832, his symptoms became still more violent, and the duration of the paroxysms more protracted. He had one in March, a second in May, and a third in June, each of which was accompanied by some numbness and loss of power in the lower extremities; this, however, was slight, and disappeared altogether as the vomiting subsided. About this time, he noticed that his urine was scanty, and deposited more sediment than usually. He also complained of being very apt to catch cold whenever he got out of bed, and stated that he suffered occasionally from severe twitches and pains in his legs, thighs, arms, and other parts of his body, which were generally succeeded, and carried off, by profuse perspirations.

In August, 1832, he had a violent attack, which lasted nearly a month. The vomiting was incessant, continuing night and day, and he suffered severely from the feeling of painful constriction already described. On getting up after this attack, his legs suddenly failed him, and he dropped down on the floor quite powerless. The paralysis did not now disappear during the intervals, although it grew somewhat better after each fit of vomiting had ceased; indeed he used to improve in his walking after the paroxysm had entirely disappeared; and, aided by two sticks, supported himself so as to give some hopes of a recovery, until a recurrence of his attack reduced him again to a state of almost total paraplegia. His legs now began to waste sensibly, and he noticed that they had lost their feeling and were remarkably cold. He also complained of severe twitches of pain in various parts of his body, accompanied by profuse night sweats, and turbid, scanty urine.

For some months before his death he was completely paraplegic, and continued to be attacked with violent fits of vomiting. The vomiting went on night and day, and he was unable to retain the mildest and most soothing substances for a moment on his stomach. Mr. Crampton and Dr. Ireland attended him with me, and we had recourse to everything we could think of to allay the irritability of his stomach, but in vain. After continuing to resist obstinately every form of treatment for five or six days and nights, the vomiting would suddenly cease, the gentleman would exclaim, "Now I am well," and he would then eat, with perfect impunity, substances which would prove irritating and indigestible to many stomachs. This was one of the most singular circumstances I ever witnessed. The transition from a state of deadly nausea and obstinate retching to a sharp feeling of hunger, used to occur quite suddenly. One hour he was the most miserable object you could behold, racked with painful constrictions across the epigastrium, alternately flushed or bathed with cold perspiration, and rejecting everything from his stomach, the next found him eating with a voracious appetite what-

ever he could lay hold of, and digesting everything with apparent facility.

It may be observed that as the disease in this case proceeded, the intervals between the attacks became diminished, while the paroxysms became increased in duration. For the first two years they continued only for four or five days, and appeared at intervals of six or seven months; latterly they used to last for eight or ten days, and returned every third or fourth week. During the paroxysm the only thing which he took was a little cold water with some brandy and a few drops of laudanum, which remained longer on his stomach than anything else, and enabled him to enjoy a few minutes' sleep. He never complained of any headache, and his intellect was remarkably clear, and his memory good.

No trace of organic disease could be detected in the abdominal viscera, and there was not the slightest tenderness over any part of the spine. He also retained to the last a complete power over the bladder and rectum.

At length his system began to give way; long confinement to bed, and the frequent recurrence of these exhausting attacks, completely wore him out, and he sank on the 30th September, 1833. A post mortem examination was allowed by his friends, and we scrutinized every part of his system with the most anxious care. The brain, cerebellum, spinal cord, and their investing membranes, were carefully inspected; we examined the large nervous trunks that supply the lower extremities, inspected the viscera of the thorax, and searched for evidences of disease in the stomach and intestinal tube: we could find none. There was no lesion of the brain or spinal cord, no thickening or vascularity of membranes, the large nerves exhibited their normal condition, the stomach was perfectly healthy, the intestinal canal natural, the liver and other glandular viscera of the abdomen without any trace of appreciable derangement.

Here, then, was a case of perfect paraplegia, (I say perfect, for he had lost all power of his lower extremities for more than two months before his death) which may be fairly termed functional, inasmuch as there was no lesion of any part of the nervous centres to explain the phenomena present. How then are we to account for them? The first symptoms were undoubtedly those of abdominal irritation, as manifested by the tendency to diarrhoea in an originally costive habit, accompanied by violent paroxysms of vomiting, which recurred at distant intervals. Are we to attribute this diseased condition of the stomach and bowels, which, from the remarkable periodicity of its occurrence, was evidently functional, to irritation, congestion, or inflammation of the brain or spinal marrow? From the data we are in possession of, it appears that this question must be answered in the negative. There was no headache, heat of scalp, throbbing of the temporal arteries, or other sign of determination to the head; or congestion, or inflammation of the brain, either before or during the attacks. The patient's in-

tellect was all throughout remarkably clear, and his memory good. Again, if we look for the origin of the disease in the spinal cord or its investments, we can find nothing to assist in explaining the phenomena. There was no pain in any portion of the spinal cord, and at no period of his illness could we detect any tenderness over the spinous processes. The history of the case seems to prove that whatever was the cause which operated on the nerves of the stomach and intestines, it gradually extended the sphere of its morbid influence to the spinal cord, and, through it, implicated the nerves of the lower extremities. The case is in many respects highly interesting, and well worthy of the attention of the pathological inquirer. The dissection was conducted, in the presence of Dr. Ireland and myself, by my friend and former pupil, Mr. Harris, so advantageously known for his skill in morbid anatomy. It was not made in a hurried or careless manner, each organ was carefully examined, and the process occupied at least four hours.

The next case to which I shall call your attention is one which I have already given in a former lecture: it seems, however, to be so similar in the nature of its exciting cause to the foregoing, though differing in some of its symptoms, that I shall beg leave to repeat it here.

James Moore, aged 32, was admitted into the Meath Hospital on the third of March, 1833, under Dr. Stokes's care, for an attack of paraplegia, which he attributed to cold and wet feet while engaged in working in a quarry. About a month before admission he perceived a stiffness of the great toe of his right foot, afterwards numbness and coldness of the sole, and then of the leg as far as the knee, and dragging of the limb in walking. During the progression of the disease up along the thigh it commenced in the left foot, and, after a few days, he experienced almost complete paralysis of sensation in the right lower extremity, and a lesser degree in the left, accompanied by so much diminution of the power of motion, as to render him unable to walk without support. About three weeks after the appearance of paralysis in the lower extremities, the little finger of the right hand was attacked with numbness, which passed successively to the rest, attended by some loss of the sense of touch and power of grasping objects. He had also retention of urine, and the bowels were obstinately constipated. There was no tenderness over any part of the spine. He had no pain in the head; his pupils were natural; pulse, sleep, and appetite also natural.

Here we have an instance of paraplegia apparently originating from an impression made on the nerves of the lower extremities. The man had been engaged in draining a quarry, and during his occupation was constantly exposed to wet; shortly after this he begins to complain of numbness and loss of power in the right lower extremity, and during the progression of the disease up along the limb, the left becomes similarly engaged. About three weeks afterwards, the hands, which had been also, but not so fre-

quently, exposed to the influence of cold and wet, begin to be affected with numbness, and the power of grasping objects becomes diminished. To what can we attribute these symptoms, except to the influence of cold acting on the nervous filaments of the cutaneous surface of the limbs, extending its morbid impression to the spine, and thence reacting on the nerves, so as to produce impairment of the power of motion and diminished sensation? The man certainly had no symptom of cerebral or spinal disease, nor was there anything connected with the state of the nervous centres which would lead to the supposition that paraplegia was the result of an irritation originally affecting the brain or spinal cord. It was on these grounds that I gave it as my opinion at the time, that the disease was an example of creeping paralysis, having its origin in an affection of the peripheral extremities of the nerves.

The next case is one which was also under treatment in the Meath Hospital during the course of last winter: for the particulars I am indebted to my colleague, Dr. William Stokes.

A robust, middle-aged man was admitted into the chronic ward of the Meath Hospital, in the latter end of February, 1834, labouring under paraplegia. He stated that he was generally employed as a boatman about the river and port, was frequently exposed to cold and wet, particularly in his lower extremities, and that he was in the habit of drinking freely. He had enjoyed good health until about seven weeks before admission, when he was seized with numbness of the feet and legs, which, after continuing for three or four days, was followed by tingling pains running along the course of the nerves. He then remarked that the power of his lower extremities became much diminished, and this gradually increased so as to prevent him from walking or even standing without support. His bowels became obstinately costive, and about a month after the commencement of his attack, he perceived that his urine was discharged in smaller quantity than usual, and that he was much more frequently called on to pass it than before. He also mentioned that he had gonorrhœa about six months before, and that he had used balsam copaiba and injections. Some time after this he said he noticed some white matter passing with the urine, but did not pay any particular attention to it as it gave him no inconvenience. His appetite was tolerably good, and he had no headache or any symptom of determination of blood to the brain. He denied having received any injury of the back, and there was no tenderness over the spinous processes of the vertebrae. He had no pain in the spine, either before or since the occurrence of his illness, nor was there any symptom of inflammation of the substance or membranes of the spinal cord. When admitted, he had considerable diminution of sensation and complete loss of motion in one of the lower extremities; in the other he still retained some power. He had also retention of urine, requiring the daily use of the catheter.

The treatment was as follows:—He was placed on one of Dr. Arnott's hydrostatic beds, as there was a great tendency to stripping

over the hips and sacrum, a purgative pill was administered two or three times a day to remove the costiveness, and he was ordered to be cupped over the loins. The latter was done in consequence of his complaining of some tenderness on pressure in the situation of the kidneys. His symptoms, however, went on without any improvement, and he died about a month after his admission.

On dissection the following phenomena were observed. The kidneys (which were first examined) appeared rather soft, and of a yellowish colour, but there was no vascularity, suppuration, or other change of structure. The ureters were somewhat distended, but presented no other trace of disease. The bladder was contracted, its muscular coat thickened, and its mucous membrane very vascular. There was no affection of the prostate. On examining the spinal cord Dr. Stokes observed that he thought the cauda equina appeared to be slightly softened, but remarked that from its appearance he could not state that it was actually diseased. The rest of the spinal cord appeared healthy and normal; there was no vascularity, effusion, or softening. External to the sheath of the cord there was a small, flattened, oval body, about the size of half a very small hazelnut, and of a consistence intermediate between lymph and fat. Around this there was some slight degree of vascularity. Dr. Stokes observed, that from the small size of this body, and the peculiarity of its texture, he entertained strong doubts as to its having any influence in the production of the symptoms noticed during life. He remarked, although it might have been originally the product of inflammation, and have existed in the form of an effusion of lymph, still the circumstance of its conversion into a fatty substance proved that it must have existed for a very considerable time, and the smallness of its size, as well as the obscurity of its origin, did not by any means satisfactorily explain the occurrence of paraplegic symptoms.

The next case which I have to lay before you, appears to be analogous in its mode of origin to the former:—"A gentleman of strong constitution, and extremely fond of field sports, particularly fishing and shooting, exposed himself repeatedly to wet feet at a time when he was labouring under the effects of a long mercurial course. Taking large quantities of blue pill, and exposing the lower extremities to wet at the same time, are circumstances which have an obvious tendency to produce disease; and it is not to be wondered if this gentleman became the victim of his want of caution. He got numbness and weakness in his legs, which he at first attributed to fatigue and over exertion; but as the disease went on, he became more and more powerless, and, finally, applied to me respecting his illness. On examination I found that he had no pain in the back, or tenderness on pressure; nothing, in fact, to indicate any original affection of the spinal cord. The functions of the brain also were natural, and there was nothing about him to lead me to suspect cerebral disease. He had, however, considerable impairment of the muscular functions of the lower extremities, and could

not walk without the aid of crutches, or some person to support him. In treating his case, I looked upon it as an instance of imperfect paraplegia, in which the paralysis apparently rose from impressions made upon the sentient extremities of the nerves of the legs and feet, at a time when these nerves were particularly liable to be deranged in their functions from the previous use of mercury. I therefore had recourse to remedies directly applied to the extremities of those nerves, and fortunately succeeded in restoring this gentleman to the use of his limbs. The cure, however, was not perfect, for a very notable degree of weakness still remains.

Of this form of paraplegia I have now witnessed many instances. In most cases I was induced to think that it arose from impressions made by cold and wet on the lower extremities. It is most commonly observed in young gentlemen who are addicted to fishing and shooting, and who in pursuits of their amusements get wet feet repeatedly, from walking over boggy grounds, or wading in the water. It is also observed in labourers whose employment obliges them to stand in water for many hours together, as in draining, pump-sinking, and other similar occupations. In all cases it assumes the creeping form, and generally appears at first in one limb, and afterwards in the other. There is, however, considerable variety in the rate of its progress; in some cases the patients become almost completely paraplegic in a few weeks from the commencement of the disease, in others it will go on for months, and even years, before the power of the lower extremities is completely destroyed. Where its progress is slow, it makes its approach in an insidious manner, and is at first scarcely noticed by the patient. Its latency is here further favoured by the absence of pain, numbness, or formication; for it is only at the more advanced stages of such cases that derangement or diminution of sensation is noticed. It is only when making some unusual exertion, as in going up stairs or ascending a hill, that the patient finds a more than ordinary degree of weakness in the lower extremities. The first symptom which generally attracts his attention is an incapability of walking as far as he has been accustomed, but this is attributed to some temporary weakness, or is considered to be the result of previous fatigue. As the disease progresses, walking up an ascent becomes a matter of some difficulty, there is a shuffling motion of the legs, and the patient is apt to stumble from slight obstructions. Gradually the loss of power becomes more manifest, it excites the attention and surprise of the patient, and he finds that he is no longer able to walk without the aid of a stick or some person to lean on. The paralysis is, however, seldom complete; with the help of crutches the patient continues to hobble about, and it is only in bad cases, and at an advanced period of the disease, that he becomes completely paraplegic. The paralysis is never so sudden nor so complete in this form of paraplegia, as it is in cases of disease of the spinal cord, or scrofulous ulceration of the bones and ligaments.

In other cases, however, the paraplegia, though evidently of the

same origin, and having the same creeping character, advances with much more rapidity ; and the patient may, in a few weeks from the commencement of the attack, experience a very considerable diminution of power in the lower extremities. In such cases it will be generally found that one limb is much more affected than the other, the loss of power being most complete in the limb which was first engaged.

With respect to sensation, it appears to be affected as well as motion. In the slow and chronic form of this species of paraplegia, it does not attract the attention of the patient so quickly as the derangement of muscular power ; it is generally some time before he notices any diminution of sensation, and then accidentally. In the more advanced stage, however, this becomes manifest, and is accompanied by a sensation of cold in the lower limbs, which seldom extends higher than the knees. In the more rapid and acute form, the derangement of sensation is much more obvious, and is generally the first symptom noticed by the patient. There is at first a feeling of numbness, which commences in the toes or feet, and extends up the limb : this, in the course of a few days, is followed by formication and tingling pains in the course of the nerves, and then loss of power and diminished sensation. There is, however, in both of these forms of paraplegia, much less impairment of sensation than of motion, and the loss of sensation is never so complete as in paraplegia from disease of the spine.

There is one curious symptom occasionally observed in this disease, which is that, before the appearance of any decided symptoms of loss of power in the lower extremity, irritation of the lower part of the digestive tube takes place ; the rectum becomes morbidly excited ; the patient complains of tenesmus, and thinks he is about having an attack of piles. This was the first symptom observed in one of the cases I attended ; the patient complained so much that we were induced to examine the state of the rectum, but could not find anything to account for the morbid excitement. The same observations apply to the bladder, with this exception, that the morbid irritability of this organ occurs occasionally after the disease is confirmed and has made considerable progress. On the whole, however, affections of the bladder and rectum are rare in this form of paraplegia ; and it is only at the advanced stages that we sometimes meet with that derangement in the motor powers of the bladder and rectum, which occurs so frequently, and at such an early period, in the paraplegia from spinal disease.

In cases of paraplegia from disease of the spinal cord or its investments, it has been observed that the urine becomes altered in its quality, and assumes an ammoniacal odour. I have not observed this occurrence in the forms of paraplegia that I have detailed. The urine is turbid, scanty, and voided oftener than usual ; but I cannot say that I have seen it in any case decidedly ammoniacal, even in the advanced stages of the disease, and where the patient was completely bed-ridden. Should future observations prove that this

diagnostic mark is constant, it may be of some value in distinguishing this from other forms of paraplegia.

In these cases there is scarcely anything which would lead us to fix on the spine as the seat and origin of the disease; neither can we find anything in the brain with which we can connect the paraplegic symptoms. There is no pain of the head or spine, very seldom any tenderness, the patients are in the full vigour of intellect, and all the organs of sense in their normal condition. The functions of respiration and circulation are unaffected: and it was remarked in the first case which I have detailed, that there was no change in the pulse, either during the fits of vomiting, or the intervals of ease. The appetite also is generally good; but, in almost every instance I have met with, there has been remarkably obstinate constipation.

With respect to the prognosis and treatment of this form of paraplegia, I have but little to say. The prognosis is generally unfavourable, particularly where the disease has lasted for some time, and is accompanied by morbid irritation, or loss of power in the bladder or rectum. It is also bad in proportion to the slowness with which it has come on, and the absence of pain or formication of the lower extremities. With respect to treatment, I may observe that I have never seen any benefit derived from applications to the spine. The application of blisters or issues over the back or loins, does not appear to be productive of the least good effect; of the latter, I can speak positively from experience. They are an enduring source of annoyance to the patient, and never produce the least amelioration of symptoms. I am in the habit of applying my local remedies to the legs and thighs, selecting those parts in which the greatest cutaneous sensibility exists. What I generally do, is to keep up a succession of blisters along the inside of the legs, and over the anterior and inner parts of the thighs. The practice of medicine furnishes many proofs of the utility of stimulant applications to the nervous branches, in case of disease affecting the larger trunks. Thus, in sciatica, a blister applied over the ham or calf of the leg, where many of the ultimate ramifications of that nerve are superficial, will frequently produce a much more decided effect than when applied over the origin of the nerve itself. Liniments of a stimulating kind, and blisters repeatedly applied, are the local means on which I chiefly rely in the treatment of this form of paraplegia. After some time, I commence with the use of strychnine, and continue it until some sensible effect on the system is produced, when I omit its further use, and have recourse to the exhibition of sulphur. These are the two internal remedies from which I have derived most benefit. I have in such cases seen very good effects from a perseverance in the use of the sulphur electuary, of which I have given a formula in one of my published lectures. Much also will be accomplished by the external use of sulphur, in the form of baths, and hence cases of paraplegia of this kind might be materially benefited by the internal and external use of the waters of

Lucan, Harrogate, Baden, Barége, &c. With respect to the use of mercury, it appears to be decidedly injurious. I have seen it given in three cases; in all it did much more harm than good.\*

This is all I have to say at present on the subject of paraplegia. I fear much that many omissions, and considerable deficiency of materials, will be observed in the statements I have laid before you. I hope, on some future occasion, to be able to communicate a more minute and better digested series of observations on this obscure form of disease. The subject, however, is in itself so interesting, and so important, that I have been tempted to bring it before you, perhaps prematurely. My anxiety to excite discussion, and attract further attention to a department of practical medicine hitherto quite neglected, must on this occasion plead my excuse.

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## LECTURE IX.

Case of peritonitis and enteritis terminating in fatal convulsions — Enormous accumulation of lumbrici in the bowels, producing death by convulsions — Causes of catarrhal affections of the bronchial tubes — On the râles produced by bronchitis — Remarkable proportion between the frequency of the pulse and the respiration — Use of emetics and chalybeates in chronic bronchitis — Symptoms which contra-indicate chalybeates — Trismus from inflammation of the temporal muscles — Pain in the nerves of the face, simulating tic douloureux, and caused by a carious tooth — Case of jaundice, with remarks — Connection between arthritis, jaundice, and urticaria — Analogous series of affections often caused by eating fish.

LET me direct your attention for a few moments to a case which presents some interest, as connected with the obscurity of its nature; I allude to that of the young woman, Moran, who died this morning. She came in, on Monday week last, with symptoms of ordinary continued fever, for which the only remedies employed were effervescing draughts, diluents, and a proper attention with regard to diet. She had some headache, which went away a few days after her admission; and, as she made no other complaint, her case was looked upon as one of simple fever. Some time afterwards, it was observed that her abdomen was tympanitic, and that she had diarrhoea; but she persisted in denying that she had any abdominal pain or tenderness. In addition to this, symptoms of bronchial inflammation set in, but without any remarkable distress of respiration, or acceleration of pulse. She made no complaint whatever, and seemed extremely unwilling to communicate any information respecting her condition. Under these circumstances, all that could be done was to treat the symptoms as they became manifest, and, accordingly, after having leeched the belly, I ordered a large blister to be applied so as to cover the epigastrium and lower part of the

\* [The hot springs of Virginia are often of great benefit in these cases, especially the hot douche, or spout-bath. — *Ed.*]

chest anteriorly. The only thing remarkable in her case, and to which I should have called your attention more particularly, was the repeated occurrence of rigors. It appeared, from the account given by the nurse, that she had frequent attacks of shivering on last Friday, and the two preceding days; and I have already told you, that where this occurs, you should always suspect the existence of some local inflammation.

Such were the principal phenomena observed in this case. On Saturday, she stated that she felt better after the application of leeches, and had no pain or tenderness whatever in the belly; but still it was observed that the tympanitis was undiminished, and that she was not by any means improving. This morning she called to the nurse to assist her in getting to the night-chair, when, after a few minutes, she was suddenly seized with a violent convulsive fit, and expired.

I may observe, that there was nothing in this case which would lead one to suspect the existence of cerebral inflammation. The fever was of the ordinary kind; there was no remarkable acceleration of pulse (the number of beats in the minute being only 84 when we examined her on Saturday); she had some headache, but this did not continue; and there was no flushing of the face, redness or suffusion of the eyes, heat of scalp, or throbbing of the temporal arteries. There was nothing to inform us that disease was going on in the brain, and yet the patient dies violently convulsed. Under these circumstances, how are we to explain the manner of her death? At present, I believe it would be better not to enter on any inquiry respecting this point. I shall endeavour to procure an examination of the body, and, until then, shall make no further observation.

On opening the body the next day, no trace of disease could be found in the brain. The thoracic viscera were also healthy, with the exception of some vascularity and congestion of the bronchial mucous membrane. In the abdomen there were ample marks of extensive inflammation. The cavity of the peritoneum contained a quantity of serous fluid; the intestines were glued together by lymph at almost every point of contact; and the serous membrane was highly vascular. The mucous membrane of the intestines was extensively inflamed, and there were numerous small ulcers in the situation of the glands of Peyer. The uterus, with its appendages, was in a state of intense inflammation, and presented marks of recent delivery. It appeared afterwards, that she had been delivered of a male infant, the fruit of an illicit intercourse, a few days before her admission into the hospital. Under the influence of shame, and a desire to conceal her condition, she had, throughout her illness, persisted in strongly denying the existence of any abdominal symptoms whatever.

Here this question, — whether the disease might have been cured had its true nature been discovered on her admission, — naturally suggests itself. I must candidly confess that I think it might; and

I regret extremely that the peculiar circumstances of the case rendered her anxious to conceal the existence of the symptoms of abdominal inflammation; for had it been otherwise, a more active antiphlogistic and mercurial treatment might, perhaps, have been successfully applied.

This case affords another example of the truth of what I endeavoured to establish in a former lecture, concerning the effects which irritations of the periphery are capable of producing on the central portions of the nervous system; for here death was induced by convulsions, the mediate cause of which was situated not in the brain but in the abdomen. A very remarkable and striking case of a somewhat similar nature, has been lately published by Dr. Ebermaier, in *Rust's Magazine* (Vol. 42, Part I., p. 52, et seq.), in which the abdominal irritation, caused by an enormous collection of lumbrici in the small intestines, occasioned, in a child who had previously enjoyed good health, a sudden attack of pain in the belly and vomiting, terminating speedily in fatal convulsions. The intestines were not inflamed, but were completely obstructed, in many parts of the ileum, by successive round masses, formed by agglomerations of lumbrici, rolled up together, and enveloped in an adhesive paste formed of half-digested bread, cemented by a tenacious mucus. The worms were too numerous to count, amounting to many hundreds.

A man named Murray, of middle age and rather strong constitution, has been recently admitted into the small chronic ward, with bronchitis of long standing, and frequent exacerbations. It is a case in which I am afraid a permanent cure is out of the question, and so far it is unsatisfactory; still it is necessary to be acquainted with such cases, for it is a matter of some importance to be able to inform a patient whether his disease is curable or not, and how far it admits of being relieved by treatment.

Bronchitis is an affection which generally arises from impressions made by cold, either on the skin or on the mucous membrane of the lung. I think it extremely probable that, when a person gets a catarrhal affection from exposure to cold, it is not always in consequence of an impression made on some part of the cutaneous surface. Indeed, it appears reasonable to believe that an attack of bronchial inflammation may be equally the result of an impression made directly on the mucous lining of the lung; and that a person exposed to sudden change of temperature, as in passing from a heated room into the cold air, may get inflammation of the mucous membrane of the bronchial tubes, for the same reasons that, under similar circumstances, inflammation may be generated in the mucous membrane of the eye, giving rise to conjunctivitis. We know well that one of the most common causes of inflammation of the conjunctiva, is the sudden exposure of the eye to cold sharp air, after it has been for some time submitted to the relaxing influences of strong heat and light; and there is no reason why the same rapid change of temperature, under similar predisposing causes, should

not originate disease in the mucous membrane of the bronchial tubes. It is true, indeed, that nature has taken especial pains to maintain an equable temperature in the air admitted into the chest at each respiration; the passage of this air through the mouth, nose, and pharynx, where it is warmed by the contact of an extensive mucous surface, and the small proportion which it bears to the residual air remaining in the lungs after an ordinary expiration, are circumstances that must powerfully counteract the low temperature of air inspired in very cold weather. Still a considerable difference of temperature must exist between the inspired and expired air, and consequently the air passages are exposed, *more than any other tissue of the body*, to successive and rapid alternations, which never cease from infancy to old age. Nature has, of course, wisely accommodated the vitality of the bronchial mucous membrane to the circumstances in which it is placed, and the force of a never-ceasing habit still further enables it to sustain rapid vicissitudes of temperature with impunity. In this it is probably equalled by the surface of the eyeball, which, alternately covered, warmed, and moistened by the eyelids during the act of winking, and exposed to the cold of the air, increased by a rapid evaporation from its own surface while the eye is open, must, indeed, undergo rapid variations of temperature, and yet it is never frost-bitten.

When inflammation has fastened on the mucous membrane of the air passages, it makes a vast difference as to the part on which it fixes. The air passages commence with the larynx, and terminate with the ultimate ramifications of the bronchial tubes. If the disease settles at the entrance of the air passages, and forms laryngitis, the case becomes a very serious one, laryngitis being in the infant, and sometimes also in the adult, attended with dangerous and even fatal symptoms. If the trachea should happen to be the part on which the disease falls, the inconvenience and suffering are also considerable, but the danger is by no means so urgent as in the former case. The same thing may be said of the larger bronchial tubes; inflammation here is rarely attended with such violent symptoms as those which characterize laryngitis, and it is much more amenable to treatment. But when inflammation attacks the minute bronchial tubes to any considerable extent, and particularly if it happens to be general — that is, if it affects the bronchial tubes in every part of the lungs — we have just grounds for alarm; the disease is one of an intense character, and, unless quickly relieved, runs on to a fatal termination with great rapidity.

You perceive, then, that if a patient catches cold, and gets an attack on the chest, it is of great importance to be able to ascertain what the situation and extent of the disease are, and whether the minute bronchial tubes are engaged or not. Now, how do you know this? Simply thus: — You first make a cursory examination of the whole chest, by applying the stethoscope over the superior, middle, and inferior portion of each lung, both before and behind; and, if you everywhere hear something, you conclude that the

bronchitis is general, and not confined to any particular part. You next proceed to examine with greater attention these wheezing sounds; you apply the stethoscope, and if you find in each separate spot many sources of diseased sound — *if you hear a wheezing from a great many points close together* — you may be sure that the morbid sound proceeds from inflammation of the minute tubes, for the larger ones cannot exist in the small spots over which you apply the stethoscope in such numbers as to give rise to so remarkable a plurality of sounds. Of this you may be certain, that, when you find a great many sounds are audible over a small space, the minute bronchial ramifications are engaged.

It is the custom, with those who lecture on auscultation, to enumerate many sounds as connected with alterations in the condition of the bronchial tubes. We hear of the mucous, the sonorous, and the sibilant rhonchus — their variety and intermixtures. Now I know, by experience, that these names are very apt to confuse and perplex the young stethoscopist. There is no necessity for studying with great attention the definitions of these words, or the descriptions of the various sounds they are meant to represent: I am always anxious to avoid loading the memory of the student with names. With regard to the râles in bronchitis, all he need bear in mind is, that the nature of the sound produced by air passing through the bronchial tubes will be modified accordingly as these tubes are large or small, are dry or moist, or as the moisture they contain is thin or not. The two things of greatest importance in examining a case of bronchitis is to ascertain whether the minute bronchial ramifications are engaged, and, if the tubes contain any moisture, whether it is thin or viscid.

I seldom, therefore, confuse the student by telling him whether the râle is sibilant or sonorous, when asked about the nature of the sounds heard in a case of bronchial inflammation. All I say in reply is this: that the sounds are produced by the large or small bronchial tubes, and that they are either moist or dry. When the large bronchi alone are inflamed, the sounds issuing from the lung subjacent to the stethoscope are comparatively few in number, seldom exceeding two or three; they are likewise, when dry, of a grave tone, resembling the prolonged note of a violoncello, or the cooing of a dove; or, when moist, the bubbles are large, scattered, uneven. When the minute tubes are engaged, we hear, on the contrary, not a few, but many sounds, evidently proceeding from a small portion of lung; three, four, or even six or seven sounds may be perceived together, or circumscribed within very narrow limits. These sounds undergo rapid changes of tone during the same respiration, while every moment some of them appear to cease, to be replaced by new ones. The wheezing they produce is, when dry, sharp; but observe, it is very unusual to find every one of them dry: when dry sounds occur, they are generally accompanied by others, equally minute, but evidently moist. The moment I find, on applying the stethoscope, that a great many sounds are

heard over a small spot, and that these sounds are dry and sharp, or are accompanied by certain modifications denoting the passage of air through fluid, I call the disease inflammation of the minute bronchial tubes, with increased secretion obstructing the free entrance of air. An attention to these considerations is of great importance in ascertaining the nature of acute or chronic bronchitis; for the danger is not only proportioned to the extent of the disease, but also the circumstance of the minute tubes being engaged, and the quantity of fluid they contain. The sound shows that not only the minute tubes are diseased, but also that there is a considerable quantity of viscid fluid in them, preventing the entrance of air into the air cells, and tending to produce asphyxia.

In the case we are at present considering, we found, on examining the chest, that the minute bronchial tubes were extensively engaged, and they were obstructed by a copious secretion of mucus producing considerable dyspnoea. We found, however, that this condition had lasted for many months, and that the disease was essentially chronic. He had no fever; his skin was cool; his tongue moist; appetite and digestion good; and his pulse, which had been only 60 on his admission, sank to 46 after he had been in bed for some days. Such extreme slowness of pulse as this is a very remarkable circumstance, particularly in cases of pulmonary disease; it is seldom met with except in cases of cerebral affections. Here was a man breathing twenty-six times in a minute, and with a pulse at 46; whereas, if the pulse was proportioned to the respiration, it would have been much quicker. The relation of the number of respirations to the beats of the artery at the wrist should be as one to four; thus, when we breathe fifteen times in a minute, the pulse should be at 60. But here we find a man breathing twenty-six times in a minute, and yet his pulse is only 46. We had another instance like this, in a patient in the chronic ward, whose pulse was 60, while his respirations were thirty-six in a minute. It seldom happens, when pulmonary disease is in the acute form, and respiration considerably accelerated, that there is not a corresponding increase in the frequency of the pulse; but, in chronic cases of this description, the system becomes gradually accustomed to the derangement; the continued acceleration of breathing ceases to affect the action of the heart; the lung, which is obstructed by disease in the performance of its functions, contrives, by working more frequently, to aërate the requisite quantity of blood, and, the heart adapting itself to the change of circumstances, the pulse returns gradually to the natural standard. I have seen many cases of phthisis, in which there was accelerated breathing, with slow pulse, but these were always cases of a chronic kind. I have never observed the same phenomena co-existing when the disease was acute; it is a state of things which is compatible only with chronicity of disease, in which the system becomes gradually accustomed to the change, and a kind of artificial equilibrium is finally established.

In this case we find that a man of tolerably good constitution, after exposure to cold, gets an attack of bronchitis, which becomes chronic and extends almost over the whole lung. He has a cough always existing — sometimes better, sometimes worse, occasionally aggravated. This cough is accompanied by a copious secretion of mucus; and this state of things continues for more than twelve months. Now, when bronchitis has lasted so long on persons of his class in life, it is very difficult to be cured; his poverty, his want of proper clothing, his liability to the ordinary exciting causes of bronchitis from the nature of his employment, and the habitual disregard of self so constantly observed in persons of this description, are all circumstances which forbid us to entertain any hopes of giving permanent relief.

There are two points to be attended to in the treatment of this and every other case of chronic bronchitis: first, whether there be any recent attack, and consequently any fever and exacerbation of the local symptoms present; and, in the next place, whether the secretion from the bronchial mucous membrane be copious or scanty. Now, at the period of this man's admission, there was some slight excitement of the pulse, but there was no fever or increase of bronchial inflammation present, and the heart's action was apparently not influenced by the state of the lung. In addition to this, there was no urgent dyspnoea, and the secretion from the lungs was extremely abundant. We therefore commenced by administering an emetic, which was repeated for two or three days, and then prescribed the following mixture: Mist. ferri composita, ʒij; tinct. scillæ, tinct. hyoscyami, աā ջj; to be taken three times a day in an ounce of almond emulsion. In chronic bronchitis, where no fever, no remarkable dyspnoea or acceleration of the pulse is present, and where the bronchial secretion is very copious, you will be able to produce very good effects by giving an emetic every night for two or three nights, before you begin with remedies calculated to arrest the supersecretion from the lung. They are productive of a double advantage in such cases: a large quantity of mucus is discharged from the stomach and lungs, expectoration is rendered more easy, the tongue cleans, and the appetite is improved. It was on this account we gave them in the present case, and, as you may have perceived, with much benefit. In no disease are we more apt to have a foul, loaded, and furred tongue, than in bronchitis. This state of the tongue, being usually accompanied by loss of appetite and indigestion, is frequently attributed to a bad stomach. Now the truth is, that in such cases the state of the tongue and the state of the stomach are both produced by one and the same cause — viz., the unnatural state of the bronchial mucous membrane. In the latter tissue the train of morbid actions commenced, and from it was derived that source of irritation which, inducing disease in the bronchial mucous membrane, caused a state of parts rapidly propagated along that membrane to the mouth and tongue on the one hand, and to the stomach on the other. We

afterwards had recourse to a tonic and astringent chalybeate—the mist. ferri comp.—with the view of improving the general system, and checking the superabundant secretion from the bronchial tubes. The action of a chalybeate is not merely limited to strengthening the tone of the stomach and general system; it is also well calculated to arrest the superabundant secretion from mucous surfaces in many chronic fluxes, and hence its utility in gleet, diarrhoea, and chronic bronchitis. We gave the compound iron mixture in preference to a simple chalybeate, because the other ingredients—namely, myrrh and sub-carbonate of potash—have a tendency to produce the same effect. I do not, however, prescribe this medicine in such large doses as I have frequently seen ordered, and I never give it alone. I order a dram or two to be taken three times a day, and I dilute this quantity by adding to it half an ounce or an ounce of almond emulsion or mint water. In this form it is a much safer remedy in the treatment of fluxes depending on chronic inflammation, and its exhibition is much less likely to be followed by sinister accidents. I have, in the present instance, combined with it a small quantity of squill; the reason of making this addition is so obvious that it is unnecessary for me to do more than to notice this fact. I have also added some tincture of hyoscyamus, which is an extremely valuable sedative in the treatment of many forms of pulmonary disease.

However well planned this treatment seemed to be, it did not succeed. After taking the mixture for a day or two, the man began to complain of tightness across his chest, and we were obliged to give it up. I have already stated, that in cases of this description, where the patient is using remedies to arrest secretion, you should be cautious in administering them at first, and attend carefully to their effects. If, after a patient has been using a chalybeate, or any remedy administered for similar purposes, you find that constriction of the chest and dyspnœa is increased, no matter whether the secretion is diminished or not, you may be sure that you are doing more harm than good. When the remedy acts favourably, you may know it by the following signs:—respiration becomes less frequent, and is performed with less distress, the expectoration becomes more free, the sputa begin to assume the globular form, its quantity is diminished, and it is less tenacious and viscid in its consistence. When you give a stimulant, therefore, in chronic bronchitis, you must watch its effects with care, and if it produces any increase in the difficulty of respiration, or any pain or tightness of chest, you must omit it altogether, and pass to an expectorant of a less irritating character. In this case we stopped the use of the mistura ferri composita, and immediately ordered the patient to take a grain of tartar emetic in a pint of whey. This simple remedy succeeded in a very remarkable manner, producing on the first day a very considerable alleviation of symptoms.

A man was admitted into the chronic ward a few days ago who cannot separate the lower from the upper jaw to the distance of

more than two lines. What are the cases in which we find this immobility of the lower jaw? Most commonly in tetanus or locked-jaw; but here this cannot be the case, for the man has no sign indicative of a tetanic affection, no rigidity of the muscles of the neck; his countenance is very different from that of a tetanic patient, and he has not been exposed to any of the ordinary exciting causes of that disease. But leaving all consideration of the nature of the disease out of the question, what is it that prevents him from moving his lower jaw? It must depend on one of two causes; either the muscles which perform the motions of the lower jaw are stiff, rigid, and incapable of motion, or else there is some disease of the articulation which obstructs the motion of the bone. This proposition is universally true of all articulations, that when they become impeded or completely obstructed in their motions, the derangement arises from some abnormal condition of the muscles, or of the bones and ligaments which form the joint.

In this case we find, that, in addition to being unable to perform the proper motions of the lower jaw, the patient has intense pain, darting from the angle of the jaw towards the temple, the ear, and the side of the neck. This pain is of an extremely violent character, so as to resemble tic douloureux, and the resemblance is still farther increased by its being more or less intermittent. Now, on inquiry into the history of this case, we find that the patient had some time ago laboured under toothache, for which he got the last molar tooth but one of the upper jaw extracted, and that immediately afterwards he was seized with violent pain in the part, and found that he could no longer move his lower jaw as usual. I have seen many cases of this kind, in which a painful or carious tooth, or an injury done to the gum or jaw, has been followed by violent darting pain in the nerves of the face, simulating in many particulars tic douloureux. I remember being sent for to Middleton, near Cork, some time since, to see a young lady of delicate constitution, whose health was materially deranged from what was said to be an attack of tic douloureux. She had been under the care of many practitioners, and had used very large doses of the carbonate of iron and sulphate of quinine, and at the time I visited her was taking arsenic. The first thing I did on my arrival was to examine her teeth. On close inspection I observed that on the crown of one of the upper molar teeth there was a spot which appeared to be decayed, and found on inquiry that she had frequently suffered from pain in this spot when she drank any cold liquid. I had the tooth drawn, and soon afterwards the pain completely ceased. Yet in this case the pain was not only of an intense character, preventing sleep and wearing out her strength, but it had its intermissions, and was aggravated at particular hours of the day. Another instance of the same kind came under my notice about twelve months ago. A young lady was brought to me by a medical friend of hers to have my advice for an attack of tic douloureux. She had been attended by this gentleman with great care, and no mode

of relief left untried, for her sufferings were intense, and she had constant exacerbations of pain. I asked him, were her teeth sound, or had she any disease of the gum or jaw? He said not, and that he was sure of this, for he had examined her teeth over and over again. On opening her mouth, however, I thought I saw some appearance of unsoundness in one of her teeth, and recommended her to go to Mr. M'Clean and get it drawn. She did so, and the pain quickly disappeared. I could also give many cases in which, an injury done to some of the branches of the dental nerve has given rise to symptoms closely resembling those of the tic douloureux. One of the most curious circumstances connected with such cases is, that the pain is always of a more or less intermittent character. The same thing is observed in that form of headache which arises from irritation of the brain, produced by spiculae of bone growing from the internal table of the skull. In a case which occurred some time back at the Meath Hospital, where several spiculae, some of them more than a quarter of an inch in length, were pressing on the brain, the headache was of a distinctly intermittent character. This remarkable periodicity of exacerbation, in cases where the operation of the exciting cause continues still the same, seems to be peculiar to the nervous system.

In many cases considerable derangement of the facial nerves is found to follow an injury done to some branch of the dental nerve in drawing a tooth. When the bone has been injured by the force used in extracting the tooth, it frequently happens that, if the injury be not quickly repaired, and the parts healed up, symptoms resembling those of tic douloureux or rheumatic neuralgia will supervene, and give the patient a great deal of annoyance. Such was the origin of the mischief in the case before us; the man received an injury of the upper jaw in drawing a tooth, which is not as yet healed, as you may perceive by introducing a probe between the separated portions of gum, when you will find it grate against the rough surface of the bone. In addition to this, there is considerable tenderness of the gum and swelling of the neighbouring parts, which have extended to the muscles, their sheaths, and finally to the articulation of the lower jaw. You can satisfy yourselves of this by examining the parts and striking the lower jaw, so as to press it suddenly upwards and backwards into the glenoid cavity, just in the same way as you press the thigh bone against the acetabulum when you wish to ascertain whether there is inflammation of the hip joint. The motion of the lower jaw is here prevented by inflammation, extending from the upper jaw so as to involve its ligaments and the neighbouring muscular sheaths. There are other causes, also, which may be attended with the same diminution of motion in the joint. Thus a man may get an attack of rheumatism in the scalp, which may extend to the temporal muscles and prevent him from being able to depress his lower jaw, and I have known cases in which this condition of the temporal muscle has given rise to suspicions of the existence of trismus. When you examine the articu-

lation you find nothing amiss, but when you come to press on the temporal muscle above the zygoma, the patient complains of pain and tenderness. The irritation produced by rheumatic inflammation gives rise to a fixed rigid state of the muscle, and hence the patient cannot open his mouth. This form of disease I have described long since, in a paper published in the Dublin Hospital Reports. It can be relieved with great ease by applying leeches to the temple, and ordering the patient to rub over the part a small portion of mercurial ointment with extract of belladonna, two or three times a day. The same state of the temporal muscle is sometimes observed as resulting from an extension of inflammation, in case of a wound of the scalp in its vicinity.

In the case before us, almost everything will depend on the process which nature may adopt with respect to the injury of the maxillary bone. If the bone throws up healthy granulations, and the inflammatory process ceases, the affection of the nerves, as well as of the muscles and joint, will quickly subside. All we can do under the circumstances is to apply leeches over the side of the face, and order the man to rub in mercurial ointment; everything, however, will depend on the turn the disease of the bone may take.

I wish to make a few observations on a case of jaundice in the small chronic ward. I do not intend to enter into any particular inquiry concerning the causes of this disease; you are aware that it may depend upon many causes, upon affections of the mind, gastro-duodenitis, inflammation or abscess of the liver, the presence of gall-stones, diseases of the head of the pancreas, aneurism of the hepatic artery, and, what is more remarkable, in some cases may arise without any assignable cause whatever. In the present instance it seems to have been the result of acute hepatitis. The man was attacked with symptoms of inflammation of the liver, and about a fortnight afterwards became jaundiced. It is unnecessary for me to draw your attention to the history of the case, or the present state of the patient; all I shall do at present is to make a few remarks on some point of treatment.

In the first place, the jaundice is, as you perceive, of an intense character; the man is as yellow as he could be. Now this I look upon as a favourable sign; the deeper the colour is in recent cases the greater is the chance of effecting a cure. There are no cases so untractable as those in which the tinge of yellowness is so faint that you would be likely to overlook it, as in the case of a man in the chronic ward, in whom the colouring is so slight, that it requires some attention to ascertain whether he is jaundiced or not. Such a case as this is always of a chronic, untractable character, and this is too frequently connected with a scirrhouous state of the liver. Again, in this man's case we cannot detect any appearance of bile in the evacuations: this is another good sign. When jaundice co-exists with bilious stools, the prognosis is, generally speaking, bad. A but slight tinge of yellowness of skin, and the continued presence of bile in the stools, are two circumstances which I

always look upon as indicative of an unmanageable and frequently incurable affection. It generally depends on a scirrhous state of the liver, or some organic derangement beyond the power of medical treatment. Again, another good sign in jaundice is, that as long as the bile is absent in the stools it should be present in the urine. If a patient labouring under jaundice has clay-coloured stools, and you find on examination that his urine becomes heavily laden with it, it is a very favourable circumstance, for it shows that, although the usual channel for the exit of bile from the system is stopped up, nature has provided a remedy for the evil by establishing another emunctory. You can understand then the reason of the anxiety I felt at finding that this patient's urine was becoming paler and diminishing in quantity, at a time when bile was not present in the stools. In acute cases of jaundice, you should always bear in mind that patients will sometimes have a complete suppression of the biliary discharge, followed by coma, without any symptoms of disease of the brain. Why this occurs in some and not in all cases we cannot understand, but from whatever cause it may arise, we find that in some instances jaundiced patients become stupid and lethargic, and die in a state of confirmed coma. In such cases there is always very great danger, and where coma has appeared as a prominent symptom of jaundice, you should always give an unfavourable prognosis. I have never seen but one patient recover under such circumstances. On the other hand it is equally curious that derangement of the urinary system is one of the most common symptoms of disease of the brain. You will therefore understand the cause of my alarm, when I observed a diminution of the urinary secretion in this patient. As soon as I perceived this symptom, though the patient had been taken mercury, and was improving at the time, I immediately administered a diuretic, and this fortunately succeeded in producing a copious flow of urine. We prescribed the following diuretic, which had not been taken for many hours when it produced a decided determination to the kidneys:—

R Mistura amygdalarum, 3vij.  
 Nitrat. potassæ, 3ij.  
 Tinct. digitalis, gtt. xv.  
 Spiritus ætheris nitrosi, 3ij.

of which a tablespoonful was to be taken every second hour.

There is one practical remark to be made on this and other similar cases. As soon as the symptoms of jaundice begin to decline, and bile makes its appearance in the stools, you should attend carefully to the state of the patient, and note any symptom which may occur of an anomalous character. Now, in this patient's case, we observed that a degree of restlessness was present, which terminated in a complete want of sleep. About the time when he began to manifest a degree of improvement, he became quite sleepless without any evident cause, and continued so for two or three nights;

and I have already stated in a former lecture that, no matter when this symptom occurs, whether in fever or towards the termination of some acute disease, it always requires your attention. I therefore immediately took proper steps to restore sleep; and accordingly we find, on inquiring this morning, that he has rested well and feels much better. The man had been taking mercury, and his bowels were free; but, not content with this, I gave him a purgative, consisting of infusion of senna with electuary of scammony. This he was directed to take early in the morning, so as to secure its operation before night; and about nine or ten in the evening, after his bowels had been freely opened, he took a full opiate, which produced a long and refreshing sleep.

Before I conclude, allow me to communicate a few detached observations on the connection which exists between jaundice and some other diseases—as, for example, inflammation of the joints. It is not many years since Dr. Cheyne and I attended a gentleman in Lower Mount street, who, in consequence of exposure to cold, was attacked with inflammation of the joints, accompanied by considerable general fever; almost every joint was attacked in succession, and his sufferings were excessive. The disease bore the form I have so often described under the name of *acute sweating arthritis*—a form very obstinate and difficult to treat, and accompanied after some time with great constitutional debility. When this gentleman had been about ten days confined to bed under treatment, he suddenly became jaundiced, and it was now evident that acute, but not violent, *hepatitis* was superadded to the original disease.

In a day or two afterwards, a copious eruption of nettle-rash—*urticaria*—appeared over his body and extremities. Exactly the same diseases appeared, and in a similar order of succession, in a man treated in the Meath Hospital, in June, 1832—an occurrence which at the time excited some interest among the students; for when I observed that jaundice had supervened on arthritis, I mentioned to the class that it was not at all unlikely that the jaundice would be soon attended by urticaria. I was induced at the time to make this remarkable prediction, as my mind was full of the subject, having been engaged, along with Mr. Porter, in attending a medical friend residing in Bagot street, in whom jaundice was soon followed by urticaria. Since my attention has been drawn to the connection between these three diseases, I have seen and heard of several other instances in which they appeared thus associated together. A circumstance so remarkable deserves to be studied with more than ordinary interest. Let us, therefore, consider what facts are supplied by physiology and pathology capable of throwing some light upon this hitherto unobserved and uncultivated subject. In the first place, nothing has been longer recognized by physicians, as an established fact, than the intimate sympathy which exists, both in health and disease, between the digestive organs and the skin. Now, acute hepatitis always produces more or less derange-

ment of the stomach and alimentary canal, and we may therefore consider its connection with urticaria in the same way that we are in the habit of viewing the cases, so frequently observed, in which certain sorts of fish have produced serious symptoms of indigestion followed by nettle-rash. The association between these two diseases is rendered more remarkable by the fact, that, when fish taken as food exerts a poisonous effect on the system, it frequently produces not merely violent stomach and bowel complaint, but also inflammation of the joints and rheumatic pains. If I can establish this, you will allow that the connection between arthritis, disease of the digestive organs, and urticaria, can no longer be considered as fortuitous and depending on the accidental concurrence of causes having no determinate relation, but must be looked on as owing to and arising from the operation of some fixed law which regulates and originates this development of morbid actions in, if not a frequent, at least an uniform mode of succession.

The Otaheitan eel (puhhe pirre rowte) produces, when eaten, a most copious scarlet eruption of the skin — most probably urticaria — and occasions *sudden tumefaction of the abdomen*, together with swelling of the extremities, hands and feet; the pain felt in the limbs is so excruciating that the patient becomes quite frantic. I may remark here, that this, and many other species of fish which act as poisons on the system, give rise very speedily to paralysis of the extremities. You will find, in the *Edinburgh Medical and Surgical Journal*, vol. iv., p. 396, in an excellent review of Dr. Chisholm's work on the poison of fish, an account of the effects produced by eating the *murena conger*, the following passage. "In the course of the following night, they were all seized with violent griping and cholera, together with a peculiar sensation in the lower extremities, attended with violent convulsive twitches, faintings, &c. They all perceived a brassy taste in the mouth, and a rawness of the œsophagus as if it had been excoriated. These symptoms continued to afflict the negroes for a fortnight, and then terminated in *paralysis of the lower extremities*. After suffering for several months, they recovered with difficulty."

Are we not here forcibly reminded of what I said in a former lecture concerning the connection between enteric disease and paraplegia?

Werlhoff, as cited by my friend Dr. Autenrieth, in a book\* of extraordinary ability and research, gave a case where the *gadus æglesinus, asellus*, produced a violent affection of the stomach and bowels, together with urticaria. Chisholm relates the same of the flesh of the dolphin. Urticaria, diarrhoea, dysentery, paraplegia, are said by the same author to be frequently observed in consequence of eating the flesh of the *gray snapper*. Forster relates a similar train of accidents produced by eating the *sparus pargus* (porghee). In short, I could bring forward citation after citation in

\* *Ueber das Gift der Fische.* Tübingen, 1833.

proof of the truth above advanced; but I am done, for enough has been already said to establish the point in question.

Having established the fact that disease of the digestive organs is often intimately associated with urticaria, it remains to prove that a similar connection exists between hepatitis — the cause of the derangement in the digestive organs (in the case before us) — and arthritis. Every one has observed how frequently inflammation of the joints becomes in its course complicated with inflammatory affections of internal viscera. In general, those viscera whose component tissues are most similar to the articular, are the organs affected. Hence the heart and pericardium are so often attacked in the course of rheumatic fevers. It sometimes happens, however, although less frequently, that the internal organ attacked has little analogy in point of tissue with the joints. Thus, in rheumatism, and in gout, the stomach, the bowels, the lungs, or the liver, may become engaged; and of these, none, perhaps, so frequently as the liver. We need not be surprised at this, when we consider how intimately the digestive function is connected with arthritic inflammation, which is indeed generally preceded or accompanied by well-marked symptoms of hepatic and stomach complaints. Indeed, almost all medicines that afford relief in arthritis are attended with well-marked symptoms of their having acted upon the secretions of the alimentary canal and liver. Thus, colchicum seldom diminishes the pain and inflammation of the joints, until it produces copious bilious evacuations.

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## LECTURE X.

On bed sores in fever, and their treatment — Instances of fever spreading by contagion — Attacking a person whose mouth was affected by mercury — Observations on the use of tarter emetic in fever — An account of the manner in which it is usually employed — New views upon this subject — Practice first introduced by Dr. Graves of giving tarter emetic, combined with opium, in the advanced stages of fever — Successful cases — Treatment of fever with profuse sweating in the commencement — Mr. Cockson's case — Mr. Stephenson's case — Mr. Knott's case.

I BEG leave to draw your attention to-day to some points connected with the treatment of fever. The number of fever cases we have had of late is much greater than for some years; and to those who are anxious to acquire a knowledge of the phenomena and character of one of the most interesting and important of human maladies, our wards furnish at present very ample opportunities. I trust every gentleman who listens to me will avail himself of such advantages, and not permit opportunities of acquiring valuable information to pass away unprofitably. It is my duty to speak of the particular modes of treatment adapted to fever cases, to inform you how each symptom may be most successfully combated, and to lay down rules for your guidance in each particular emergency;

it will be your business to collect and arrange the detached materials, and form your general principles with respect to the management of this very important disease. It has never been my wish to speak generally of the nature or treatment of fever; time will not permit me, nor do I wish to encroach on the province of those who lecture on the practice of physic; my object is merely to note symptoms as they rise, to speak of their nature and treatment, to confine myself to detached observations, and, as far as lies in my power, to contribute facts to those who write or lecture on practical medicine.

A woman has been admitted lately, who had been labouring under fever for a considerable time before she came into the hospital. This poor creature seems to have been in very miserable circumstances during her illness; her bedding must have been totally neglected, and no attention paid to cleanliness, for on her admission, though nearly free from fever, she was covered with bed sores to a frightful extent. Almost every point which had been subjected to pressure had ulcerated, and the ulcers went on undermining the skin, and committing terrible devastation in the cellular substance. Cases like this require great care and unremitting attention; it is on the exercise of an active and untiring humanity that the cure will mainly depend. In the first place, you are to recollect that the efforts of the constitution towards the re-establishment of health are impeded by the irritation of the sores; sleep is prevented, and the patient kept in a state of continual suffering, while a constant drain from the system is kept up by the ulcerative discharge, adding to the amount of existing debility. Hence a pseudo-febrile state arises, characterised by quick pulse, restlessness, and want of sleep, somewhat akin to that which is produced by scrofulous irritation. The appearance, however, of general excitement of the system, should never prevent the physician from adopting every mode of strengthening the patient as much as possible. You will not succeed in removing this condition by an antiphlogistic regimen; the patient requires tonics and narcotics, with a nutritious but not stimulating diet. If you put him on a low regimen, and give anti-febrile medicines, you will do mischief; you will increase the existing debility, and add to the source of febrile excitement. Your practice should be to prescribe a nutritious diet, wine, and the sulphate of quinine, and to treat the sores with stimulant applications. The local application which we found most beneficial in such cases, is one composed of two ounces of castor oil, and one of balsam of Peru, which is to be applied on pledgets of lint, and covered with a poultice of linseed meal two or three times a day. In addition to this, we direct the sores to be washed night and morning with a solution of chloride of soda, in the proportion of twenty or thirty drops of the saturated solution to an ounce of water. We also direct the patient to lie occasionally on her face, and enforce the strictest attention to cleanliness on the part of the nurse. Dr. Arnott's hydrostatic bed is an

excellent adjuvant in the treatment of this disease, but unfortunately the one we have is at present out of order.

Such, then, is our mode of treatment. We order the patient nourishing, but not heating, food; we give wine, regulating its quantity according to its effects on the system, and the liking of the patient; we prescribe small doses of the sulphate of quinine, and administer an opiate at night to allay irritability, and procure sleep. The local treatment consists in the use of stimulant and detergent applications, poultices, attention to cleanliness, and change of position.

With respect to the present epidemic fever, we have now seen so many instances of its direct communication from one point to another in our wards, that we are induced to believe it to be contagious. From the great number of applicants labouring under serious and threatening diseases, we are sometimes obliged to put into our fever wards, patients affected with local inflammations, accompanied by symptomatic inflammatory fever; several of these, while recovering, have been attacked with symptoms of the present epidemic. A man was admitted last week into the fever ward with violent pneumonia; the right lung was extensively hepatised, and, in addition to this, the pleura was found to be engorged over a large portion of its surface. The case was one of extreme distress, and the state of the patient apparently hopeless; however, by appropriate depletion, assisted by mercury and blisters, convalescence became established, and the pulmonary symptoms were rapidly subsiding. His system was still under the influence of mercury, his fever had disappeared, his dyspnœa was relieved, his cough, and all the other symptoms, nearly gone, when he was suddenly attacked with fever, and that of the same character as prevailed among the patients in the same ward. This is, I believe, the sixth or seventh case, in which patients labouring under some other form of disease, have been seized with symptoms of the present epidemic, while lying in the same ward with fever patients. I have thought it necessary to make this observation, because you will find it asserted in medical works, and by physicians of considerable eminence, that in hospitals fever does not spread from one patient to another, and that where it does appear among many individuals in the same house, its spread is chiefly favoured by want of cleanliness and proper ventilation. This, however, we can state to be the fact, that fever will spread among patients in the same ward, independent of anything connected with filth or foul air, for we have seen it occur in our wards, which I can assert are kept as clean, and as well ventilated, as any in the kingdom.

There is one circumstance connected with this case worthy of remark, with reference to the supposed antifebrile properties of mercury. It has been stated that mercury exercises a prophylactic influence over the system, and several persons who have cultivated medicine with success, but particularly some army surgeons of

high authority, have asserted that the use of mercury not only cures fever, but also secures against it. I am afraid that in this and other cases, mercury has more credit than it deserves. In speaking of cholera, on a former occasion, I have told you that I had seen persons under the influence of mercury take cholera and die of it; and here we find a man, whose mouth is still sore, in whom salivation had not ceased, getting an attack of fever at a time when he had just recovered from another disease. This shows that mercury is not to be looked upon as a prophylactic in cases of fever of a contagious nature. We cannot always cure or prevent fever with mercury; on the contrary, where fever of a particular kind is present, it prevents the constitution from yielding to its influence. Thus, in a case of hectic fever, brought on by suppuration of the liver, it has been found impossible to bring the system under the influence of mercury.

I come now to speak of a matter of great importance in the treatment of fever—I allude to the indications for exhibiting, and the mode of giving, tartar emetic at different periods of the continued fever of this country. For some time I have been in the habit of employing tartar emetic with very remarkable success at various periods of fever, but principally towards its termination. I am therefore anxious to lay before you a brief statement of my experience of this valuable remedy, and I shall take leave to illustrate this by a reference to several very remarkable cases in which its administration was followed by the most decided and satisfactory results.

You are all aware that tartar emetic has been long and justly valued by the profession for its manifold and energetic properties. Without referring to its importance in the treatment of pulmonary diseases, and almost every form of local inflammation, I may observe, with respect to our present subject, that tartar emetic in small portions, dissolved in a quantity of whey or water, has been for a considerable time a popular and successful remedy in the commencement of febrile symptoms. Whether it is by its action on the stomach and intestinal canal, or by producing diaphoresis, or by some peculiar influence on the nervous and circulating systems, that it produces its favourable effects, we cannot exactly say; but we know that it frequently succeeds in cutting short, or removing, febrile symptoms. All these matters are, however, sufficiently well known to every student, and require no comment.

In a preceding lecture, when speaking of the best means of procuring sleep in various forms of acute disease, I alluded to the peculiar narcotic power of the preparations of antimony, and dwelt on the benefits derived from a combination of antimonials with those medicines which are strictly termed narcotics. I told you in that lecture that the good effects of tartar emetic in delirium tremens seems to be totally independent of its action on the stomach; for we had witnessed those effects when it had not excited either nausea or vomiting. I referred also to many instances of delirium tremens,

in which opium in every form had failed in procuring sleep, and where a combination of tartar emetic and laudanum had succeeded in tranquillising the patient, and producing sound, refreshing sleep. Bearing this important fact in mind, we shall proceed to an examination of the circumstances which require the use of tartar emetic in fever.

There is a peculiar stage in one form of fever, and that exceedingly dangerous and threatening, in which I have derived most signal benefit from the use of this remedy. A patient, suppose, gets an attack of fever, he has all the ordinary symptoms, as thirst, restlessness, heat of skin, quick pulse, and headache. You are called in about the third or fourth day, and find that he has all the symptoms I have mentioned still present; his face is flushed, his head aching, his pulse from 100 to 110, but not remarkably strong; you find, also, that he has been sweating profusely from the commencement of his illness, but without any proportionate relief to his symptoms, and that he is restless and watchful. You are informed that his perspirations are so great that his linen has to be changed frequently in the day, and that, notwithstanding this, the pulse has not come down, the headache is undiminished, and the patient has become more and more sleepless. Here comes a very important practical question, namely—How are you to treat such a case? The patient has no epigastric tenderness, no cough, no sign of local disease in either the thoracic or abdominal cavities; he has been purged, used diaphoretics, and perhaps mercurials; every attention has been paid to regimen, ventilation, and cleanliness; but still he lies there in a state of undiminished febrile excitement, with persistent headache, quickness of pulse, and sleeplessness.

In such a case as this you have nothing to expect from the sweating; it will never produce any relief. I was called some time back to see a young gentleman in fever, who was placed in similar circumstances to those which I have just detailed. It was about the sixth day of this fever, and I found him with a pulse of about 110, with considerable restlessness and headache, and was informed that he had perspired profusely from the commencement of his illness. On hinting the necessity of more active treatment than that which had been employed, his physicians appealed to the perspirations as decidedly contra-indicating depletion. They said that the profuse sweating pointed out the impropriety of active measures, and that it was a symptom that would be speedily followed by relief. I am convinced that they had taken a wrong view of the case, and stated as my opinion that nothing was to be expected from the perspirations; that when co-existing with a persistent febrile condition of the system, when accompanied by quick pulse, headache, and restlessness, perspirations always indicated the necessity for antiphlogistic measures, and in particular for the use of the lancet. I instanced the case of patients labouring under arthritis with profuse perspirations not accompanied by relief, and said that it was well known that such cases were most successfully

treated by a full bleeding from the arm. I accordingly stated, that although the disease was of five or six days' standing, and the pulse not very strong, I would advise immediate bleeding. Sixteen ounces of blood were therefore abstracted, with some relief to the patient, and without increasing his debility; and it was then a question what further steps were to be taken. The young gentleman had been actively purged; he had no cough or abdominal tenderness; his symptoms were headache, sweating, and sleeplessness; and to these, nervous agitation had now become superadded. I proposed here what surprised my colleagues very much, and this was, to give our patient large doses of tartar emetic. They said the practice was very strange, but consented to give it a trial, on laying before them the reasons which induced me to prescribe it. I said that in such cases the tartar emetic, forming as it were a part of the antiphlogistic treatment which commenced with general bleeding, would have a tendency to cut short instead of increasing the perspiration, by reducing the inflammatory state of the system on which it depended. The reasoning seemed rather paradoxical — nevertheless it turned out to be correct. I ordered the tartar emetic to be taken in the quantity and mode in which it is generally prescribed in acute pneumonia; that is to say, six grains of tartar emetic combined with a little mucilage and cinnamon water in an eight ounce mixture, to be taken in the course of twenty-four hours. After taking five or six grains, the sweating began to diminish; on the second day he scarcely perspired any, and his headache was greatly relieved; he began to improve rapidly in every respect, sleep returned, nervous agitation ceased, and convalescence became soon established.

The next case in which I employed tartar emetic with signal benefit was one of very insidious character, as many of them are at present; they exhibit no prominent or alarming symptoms, and yet continue to run on day after day without any tendency to crisis. The gentleman who was the subject of this case got an attack of fever unaccompanied by any remarkable peculiarity, except that he was very nervous, and alarmed about his situation. His fever went on day after day without any decided symptom; he had no distressing headache, no cough, little or no abdominal tenderness; there was no vomiting or diarrhoea; and his pulse was not much above the natural standard. He had been leeched over the stomach at the suggestion of some medical friends, but this was done rather by the way of precaution than for the purpose of combating any actual disease. About the eighth or ninth day the pulse began to rise; he complained of headache, and became restless and watchful. On the eleventh day the headache had greatly increased, he was in a state of great nervous excitement, and had not closed an eye for the two preceding days and nights. This state of insomnia and nervous agitation was immediately followed by violent paroxysms of delirium; his eyes, never closed in sleep, wandered from object to object with unmeaning restlessness; his limbs were in a state

of constant jactitation, and he raved incessantly: his voice being occasionally loud and menacing, at other times low and muttering. His friends became exceedingly alarmed, and every remedy which art could suggest was tried: — his head was shaved, and leeched until they could leech no longer; cold lotions were kept constantly applied with unremitting diligence, and he was purged freely and repeatedly. At this period, that is to say, about the eleventh day of the fever, I was requested by this gentleman's medical friends to visit him. On examining the patient, I found that he was constantly making violent efforts to rise from his bed, and that he had a great deal of the expression of countenance which belongs to a maniacal patient. Under these circumstances, I advised the use of large doses of tartar emetic, in the mode already detailed, except that in this case, in consequence of the violence of the delirium, I ordered the quantity prescribed for a dose to be taken every hour instead of every second hour. The patient took about ten or twelve grains during the course of the night, and next day his delirium had almost completely subsided. Under the use of the remedy he became quite calm, fell into a sound sleep, and began to recover rapidly.

In the two preceding cases I was guided by ordinary principles, recognised by all physicians, and according to which the exhibition of tartar emetic is recommended in fever whenever there is undoubted evidence of determination of blood to the head, producing headache, loss of sleep, and delirium. In the cases which follow, tartar emetic was exhibited at a period of fever, and under circumstances that were, with respect to the exhibition of this remedy, not less novel than important. The principles which led me to this practice have long been established, but nevertheless, the practice is entirely new, and (I say it with pride, for it has already been the means of saving many valuable lives) it is entirely my own.

Shortly after the commencement of our present session, Mr. Cookson, a pupil at this hospital, and remarkable for his diligent attention to clinical pursuits, caught fever while attending our wards, in which many cases of the present epidemic were then under treatment. His fever was of an insidious nature, not characterised by any prominent symptom, not exhibiting any local disease to combat, or any tendency to crisis. For the first seven or eight days, with the exception of headache, which was much relieved by leeching, he seemed to be going on very well; his skin was not remarkably hot; he had no great thirst, nausea, or abdominal tenderness; his pulse was only 85; and he had sweating, which was followed by some relief. About the eighth or ninth day the pulse rose, and he began to exhibit symptoms of an hysterical character. Now, in every case of fever, where symptoms resembling those of hysteria come on, you should be apprehensive of danger. I do not recollect having ever met with a single case of this kind which did not terminate in nervous symptoms of the most formidable nature. I prescribed at the time the usual antihysterical medicines, but without any hope

of doing good, knowing that these symptoms were only precursory to something worse. I also, as a precautionary measure, had leeches applied to his head. The fever went on, the headache became more intense, he grew nervous and sleepless, and fell into a state of great debility. On the fourteenth day of fever his tongue was black and parched, his belly tympanitic ; he was passing everything under him unconsciously ; he had been raving for the last four days, constantly attempting to get out of bed, and had not slept a single hour for five days and nights. Dr. Stokes, with his usual kindness, gave me the benefit of his advice and assistance at this stage of Mr. Cookson's illness, and we tried every remedy which experience could suggest. Blisters were applied to the nape of the neck, the head was kept cool by refrigerant lotions, the state of the belly attended to, and, as we perceived that the absence of sleep was a most prominent and distressing symptom, we were induced to venture on the cautious use of opium. It was first given in the form of hydrarg. c. cretâ, with Dover's powder, with the view of relieving the abdominal symptoms as well as procuring sleep. This failing in producing the desired effect, we gave opium in the form of enema, knowing its great power in the delirium which follows wounds and other injuries. This was equally unsuccessful with the former. He still was perfectly sleepless. We came again in the evening, and, as a last resource, prescribed a full dose of black drop, and left him with the conviction that if this failed he had no chance of life. On visiting him next morning at an early hour, we were highly mortified to find that our prescription had been completely unsuccessful ; he had been more restless and delirious than ever. Here was the state in which we found him on entering his chamber at eight o'clock in the morning of the fifteenth day of his fever. He had universal tremors and subsultus tendinum, his eye was suffused and restless, he had been lying for some days entirely on his back, his tongue was dry and black, his belly tympanitic, his pulse 140, quick and thready, his delirium was chiefly exhibited in short broken sentences and in a subdued tone of voice ; and it was now eight days and nights since he had slept. Here arose a question of great practical importance. How was the nervous agitation to be calmed and sleep produced ? Blisters to the nape of the neck, cold applications, and purgatives, had failed ; opium in various forms had been tried without the slightest benefit ; if sleep were not speedily obtained he was lost. At this emergency a mode of giving opium occurred to me which I had never thought of before. Recollect what his symptoms were at this period : quick, failing pulse, black, dry, tremulous tongue, great tympanitis, excessive prostration of strength, subsultus tendinum, extreme nervous agitation, constant muttering, low delirium, and total sleeplessness. I said to Dr. Stokes that I wished to try what effects might result from a combination of tartar emetic and opium ; I mentioned that I had given it in cases of delirium tremens with remarkable success, and thought it worthy of trial under the circumstances then present.

Dr. Stokes stated in reply, that he knew nothing with respect to such a combination as adapted to the case in question, that he had no experience to guide him, but that he would yield to my suggestion. We therefore prescribed a combination of tartar emetic and laudanum in the following form, which is that in which I generally employ the remedies in the treatment of delirium tremens:—  
*R Antimonii tartarizate grana quatuor, tinct. opii. drachmam, mixturæ camphoræ, 3vij.* Of this mixture, a tablespoonful to be taken every second hour. The success of this was almost magical. It is true that it vomited him; after taking the second dose he threw up a large quantity of bile, but it did him no harm. After the third or fourth dose he fell asleep, and awoke calm and refreshed; he began to improve rapidly, and soon recovered.

The next case to which I shall direct your attention is that of Mr. Stephenson, a pupil of Mr. Parr of this hospital. This young gentleman, as many of you will recollect, was attacked with fever about the middle of January. On Thursday evening he complained of languor and malaise, and on the following day felt himself feverish, but without any prominent or decided symptom. At night he took a dose of calomel and antimonial powder, which had no sensible effect, and the following day complained of shivering, violent headache, pain in the back, thirst, prostration of strength, and sleeplessness. He was ordered to take a combination of tartar emetic and nitrate of potash in camphor mixture, which produced a few loose stools and some diaphoresis; but in consequence of its effect on the stomach, and his complaining much of thirst and epigastric tenderness, the tartar emetic was omitted, and effervescing draughts prescribed. Two days afterwards, the epigastric tenderness still continuing, twelve leeches were applied over the pit of the stomach, followed by blister, which gave relief, and the bowels were kept open by enemata. He commenced a second time the use of the tartar emetic and nitrate of potash, with the addition of five drops of tincture of opium to each dose, but was obliged to give it up again in consequence of the increase in his gastric symptoms. He now became exceedingly restless, and his delirium began to assume a very intense character. Leeches were applied behind the ears, his head shaved, and his temples blistered; he had also a large blister over the abdomen, which gave him considerable relief, but the cerebral and nervous symptoms became much worse. The delirium went on increasing, accompanied by subsultus tendinum, and picking the bed-clothes; he was perfectly sleepless; raved incessantly, and had to be kept down in bed by force. On the 17th day of his fever he was in the following condition,—tongue brown and rather dry, no remarkable thirst or abdominal tenderness, eyes red and ferrety, no sleep for five nights, constant muttering and delirium, (which had now assumed the character of delirium tremens,) subsultus tendinum and jactitation extreme, urine and fæces passed under him unconsciously. I directed the combination of

tartar emetic and laudanum to be immediately given, carefully watching its effects. He had only taken two doses when a degree of calmness set in, bringing with it relief to all his symptoms, and before a third dose could be administered, he fell into a profound sleep, from which he awoke rational and refreshed. The mixture was continued every four hours with increasing benefit, he slept long and soundly, and began to improve in every respect. On the second day after he had begun to use the tartar emetic, he took a little porter, which was changed the next day for claret and chicken broth. In about a week he was able to sit up in bed, and seven days afterwards was able to leave the hospital and go to the country for change of air.

The last case to which I shall direct your attention is that of Mr. Knott, also a pupil of this hospital, a gentleman remarkable for his unremitting attention to clinical pursuits, and from whom I derived much valuable assistance in conducting various post-mortem examinations. This gentleman was attacked with fever about the latter part of January, which went on for some time without any particular symptom, except considerable restlessness and nervous excitement. He then became perfectly sleepless, complained of violent headache and thirst, raved, and became exceedingly irritable. Opium in various forms and repeated doses, either alone, or combined with musk and camphor, totally failed in producing sleep, and his condition became daily worse. On the 13th day he was in a very dangerous condition; his nervous agitation had risen to an alarming height, and for many days and nights he had never closed an eye. At this period it appeared obvious that if something were not done to calm nervous excitement and restore sleep, he had but little chance of life. Under these circumstances I proposed to my friend, Dr. M'Adam, who attended with me, to give tartar emetic and opium. After he had taken about three tablespoonfuls, he had a copious bilious evacuation, and immediately afterwards fell into a sound sleep, during which he perspired profusely, and awoke in about twelve hours, with every bad symptom gone. The nervous irritability was completely allayed; his thirst and headache relieved; his tongue moist and cleaning; and his reason quite restored. From that period everything went on favourably, and he rapidly gained his health and strength.

Since the foregoing lecture was delivered, I have met with several cases of fever, in which I employed the tartar emetic and opium with the same remarkable success. A man named Christopher Nowland was admitted into Sir P. Dun's Hospital, on the 3d of February last, labouring under fever. He had been ill ten days, had raving, subsultus tendinum, and appeared unable or unwilling to answer questions. His wife stated that he had diarrhoea for the preceding three days, and that he had dozed occasionally, but never slept. He appeared exceedingly low and prostrated, and lay constantly on his back. A succession of flying blisters were ordered

to be applied to the chest and stomach, and wine and chicken broth prescribed. He also got the following draught every third hour:—

R Mist. camphoræ,  $\frac{3}{2}$ j.  
Spirit. ætheris oleosi,  $\frac{3}{2}$ ss.  
Spirit. ammoniæ aromaticæ,  $\frac{3}{2}$ ss.  
Moschi, gr. viij. — Misce.

Under the use of these remedies he began to recover from his prostration; but as the sleeplessness and delirium still continued, I ordered him to take the tartar emetic mixture in the usual way. It produced at first two or three full discharges from the bowels, and after he had taken the fourth dose he fell into sound sleep, from which he awoke much better, and soon became convalescent.

In the case of a patient named Michael Murray, who exhibited the same remarkable nervous irritability and sleeplessness, this remedy was also employed with very striking effects. This man had been ill of fever for ten days before his admission into Sir Patrick Dun's Hospital, and appeared so much prostrated that I ordered him arrow-root with beer. He raved a little on the night of his admission, and remained without closing an eye until morning. The same symptoms were observed on the following day, and his nervous irritability became increased. On the 14th of February he had been five days in the hospital, and had not enjoyed a single hour's sleep. I ordered the tartar emetic mixture to be given: three doses produced sleep: he had no other bad symptoms, and recovered completely.

In another very bad case of maculated fever, the same results were obtained. The patient, Mary Farmin, had got an attack of fever after a fright. She had been eight days ill at the date of her admission, February 25th. She had irregular pulse, sleeplessness, headache, and suffusion of the eyes; moaned and sighed continually, and appeared greatly prostrated. She was blistered, had fetid enemata, and took the chloride of soda internally with some benefit; but the sleeplessness and nervous excitement continued. In this case, though the tartar emetic was not followed by speedy convalescence, still it produced remarkably good effects; after taking four doses of it she fell asleep, and did not awake until next morning.

There are many other cases which I could adduce to prove the value of a combination of tartar emetic and opium in the nervous sleeplessness of low fever; the foregoing, however, I trust will be found sufficient.

I forgot to observe, that all the cases I have spoken of as successfully treated by means of tartar emetic combined with opium, in the advanced stage of the disease, were cases of maculated or spotted fever. I shall take a future opportunity of entering more fully into a detail of its symptoms.

## LECTURE XI.

General account of the spotted fever epidemic in Dublin, in 1834-5 — Its most remarkable features — Insidious character — Further explanation of the reasoning which led Dr. Graves to the discovery of the utility of tartar emetic in its latter stages — Dr. Nolan's remarkable case of enteritis, with collapse, cured by enormous doses of opium — Cases of singular proportions between the frequency of the pulse and of respiration — Case of acute œsophagitis.

WHEN I last addressed you, I spoke of a very important topic — the administration of tartar emetic in the advanced stages of petechial or maculated fever. A few observations descriptive of the present epidemic fever appear necessary. The commencement is frequently by no means violent, in proportion to the subsequent danger, and the patient often appears merely to labour under the symptoms of a common feverish cold, seldom preceded by violent rigors, but attended by a frequently recurring sense of horripilation. The pulse, in the very beginning, seldom exceeds 90, and in nearly half the cases it falls after a few days to 80, 70, or even lower. This slow pulse I observed in many of the pupils, and in all it was found to accompany a very tedious and dangerous form of fever. Mr. Sangster, Mr. Graves, Mr. Harris, and Mr. O'Flaherty, were all so affected; for none of these gentlemen had a pulse exceeding 70 in a minute, for many days before the period of the greatest danger. In other epidemics similar cases have occasionally occurred, but in none near so frequently as in the present. When the pulse was thus tranquil, the skin was not perceptibly hotter than natural, although occasionally a slight degree of the *calor mordax* could be detected. Patients with a slow pulse not unfrequently had little to complain of at first; for the headache, general pains, thirst, and restlessness, generally underwent a notable diminution, in consequence of sweating, which came on in the commencement — the appearance and the good effects of which were well calculated to deceive the practitioner into a belief that the fever had terminated. A more accurate examination, however, showed that this was not the case; for the tongue still continued much loaded, white in the centre and red at the tip, and the apparent subsidence of the fever was found to be accompanied by a remarkable increase of debility. As the disorder proceeded, a slight rash, like ill-defined or suppressed measles, became observable in some before the fourth day, but much oftener about the seventh. This maculated appearance of the skin increased rapidly, spreading over all parts of the trunk and extremities, and in many amounted to a well-marked efflorescence of a dusky-red colour: in others it was as it were suppressed, and was less obvious, but was still discernable by an experienced eye, appearing beneath as if veiled by the skin. It was not totally absent in one case out of twenty, which occasioned me to name the disease *maculated fever*. So the patient continued, in general, until the ninth, tenth, or eleventh day, resting sufficiently at night, with a moderate or even a slow

*rubecula nigra??*

pulse, some thirst, foul tongue, little or no nausea, epigastric pain, or abdominal tenderness of any sort, and, in fact, without a single symptom calculated to excite alarm. About this period of the complaint, matters began to assume a more threatening aspect; debility manifestly increased; the mind at times was evidently incoherent, particularly after awaking from sleep, and then raving during the night; restlessness; frequent attempts to get out of bed not unfrequently supervened in the course of a few days. The pulse, meantime, rose very suddenly in many, and continued to be frequent during the period of danger. Thus, on the tenth day, Mr. Syms's pulse rose from 85 to 120, and so continued until about the twentieth day, when improvement commenced. The same sudden rising of the pulse took place on the ninth day in Mr. M'Namara, and he died on the fourteenth day. In others, as I have already remarked, the pulse continued tranquil throughout. Thus, it was very curious to see a patient with a skin of *a natural temperature, a perfectly natural pulse, tranquil respiration, clear eye, no headache, a soft and fallen abdomen, without the slightest tendency to epigastric tenderness*; it was very curious, I say, to see such a patient in a state, nevertheless, of extreme danger, passing both faeces and urine under him; raving, incoherent, or with a low muttering delirium; subsultus daily increasing until it became excessive; the greatest possible degree of debility; a dark macular efflorescence, and at length total sleeplessness. How many theories of fever were refuted by such a case! Usually as the disease continued, and when the patient was in a very dangerous state — but seldom or never before that — the intestines began to be inflated, and the belly gradually became tympanitic; a circumstance of bad omen, and which was often the precursor of hiccup. When the symptoms did not yield to the efforts of nature or of art, the congestion of the intestinal mucous membrane, indicated by these symptoms, was soon followed by indubitable evidence of cerebral congestion — such as restlessness, suffusion of the adnata, and contraction of the pupils; this last was the most fatal of all symptoms. In two or three cases — as, for instance, that of Mr. Cookson — the cerebral congestion produced repeated fits of convulsions on the thirteenth day, and yet he recovered. The same happened in a young woman in Sir P. Dun's Hospital, in whom the convulsions occurred on the fifteenth day, and were more violent on the right side than on the left, producing strabismus and insensibility of the pupil of the affected eye. This girl lost the use of her left side on that day, but recovered it on the following; and eventually, though with difficulty, was completely cured. Frequent fits of convulsions, affecting the right side more than the left, took place on the seventh day in the daughter of a clergyman residing in the Liberty, and were followed by a stupor bordering on coma, which lasted for many hours. All these patients were covered with maculae.

I am thus particular in dwelling on the symptoms manifestly denoting a combination of primary general nervous excitement with a secondary cerebral congestion; for, on the successive deve-

lopment of these states the treatment during the latter stages hinged. I wish you clearly to understand, that, after the headache and cerebral excitement which accompanied the very commencement of the fever had been subdued, or had ceased, after sleep and calm had returned, and had continued for many days, then a new order of things commenced — subsultus, watchfulness, muttering, raving, involuntary discharges, &c. — all denoted great derangement of the nervous system; but still there was no proof that this derangement depended on cerebral congestion. After a few, or after many days, however, unequivocal symptoms of the latter set in; the face and eyes became suffused and flushed; the pupils manifested a tendency to become contracted, and occasionally convulsions took place; the patient became totally sleepless. When the latter and dangerous period of the fever was accompanied by the former nervous group of symptoms *alone*, they yielded to wine, musk, porter, and opiates; but when the symptoms indicating cerebral congestion were superadded, then it was that the case assumed so great and striking a similarity, so far as the functions of the nervous system were concerned, to the well-known variety of delirium tremens accompanied by cerebral congestion, — to that variety of delirium tremens, in fact, which can only be successfully treated by the judicious but bold exhibition of tartar emetic combined with laudanum.\* *It is the discovery of the utility of this practice in the advanced stages of spotted fevers, that I claim peculiarly as my own*; for there is not, in the writing of any author on the subject, the slightest trace of such a method of treatment to be found. As this method has manifestly saved many, many lives, under a combination of circumstances apparently hopeless, I cannot avoid congratulating myself upon being the first to propose a practice which has not only diminished the rate of our hospital mortality† in a remarkable manner, but has been the means of saving many of my friends and pupils; for, without its adoption, our class at the Meath Hospital would have been more than decimated, whereas at present we have to regret the loss of but one pupil.

One word more as to the circumstances under which this plan

\* [This is quite an exaggerated statement; we have treated several hundred cases of delirium tremens without tartar emetic or opium with *no loss* in the cases in which the stimulant treatment was used, and even including those cases in which, from the entrance of the patient in a moribund state or from some inattention, the treatment could not be tried, the mortality was less than one *per cent.* Cases of this kind, however, require something more than a mere stimulant practice; cupping and purging are often imperatively necessary to relieve the inflammatory or congested condition of the brain which accompanies the delirium tremens. — *Ed.*]

† Seventy-three fever patients — namely, forty-one aslem and thirty-two females — were treated in the clinical wards at Sir P. Dun's Hospital during the months of February, March, and April. Of these more than fifty were cases of maculated or spotted fever, and yet we lost but two females and one male. The latter was in a hopeless condition when brought in, and one of the former was attacked by varioloid just after the crisis of long-continued spotted fever.

was applicable. They were exactly the circumstances which formerly would have been believed to demand the fresh application of leeches to the head, of cold lotions, and of blisters; for it was formerly argued, and justly, we have in this advanced stage of fever not merely debility to combat—not merely general nervous excitement to overcome—but we have also to contend with cerebral congestion. The latter is the most formidable of the whole: let us meet it boldly; let us leech, let us purge, &c., &c. I need not repeat to you the details of cases illustrating the ill effects of this practice. Suffice it to remark, that you might as well attempt to cure *delirium tremens* with mere leeching, purging, and blistering. Observe, I am now speaking of the advanced stages of fever; for where cerebral congestion takes place in the beginning or the middle of fever, then is there no room for opium—then will the practitioner have recourse to the well-known remedies for active cerebral congestion; viz., purging, leeches, cold lotions, ice to the head, &c., &c. In the preceding sketch of the present epidemic, many important features have been omitted. The outline is only complete in such parts as were required to be filled up for the purpose of illustrating the principles which directed me in devising and employing this new plan of treatment. I shall conclude these observations with a few details of Mr. Thomas O'Flaherty's case.

This young gentleman was seized with the usual symptoms of maculated fever, of an insidious character, and not attended with any appearance of danger during the commencement of the disease. His pulse never rose above 100, and before the seventeenth day of the fever, it had fallen to 70, *at which it remained during the period of greatest danger*. The only circumstance which excited alarm in my mind, at an early period of his illness, was a great degree of mental apprehension manifested in his anticipating an unfavourable result, together with a tendency to sleeplessness from the beginning. On the tenth, abdominal tympanitis was observed, but this was removed in two days by appropriate remedies. On the twelfth day, he was very restless, and although he was perfectly rational in his answers to questions, and did not complain of headache, nor had flushing of face, or heat of the integuments of the head, yet he frequently talked incoherently when left alone, and towards the latter part of the day began to make repeated attempts to get out of bed. On one occasion he succeeded, and walked down stairs, from the garret to the parlor. His tongue was brown and dry. Under these circumstances, I ordered him the mixture containing four grains of tartar emetic and one dram of laudanum, in eight ounces of camphor mixture; of this he took  $\frac{3}{4}$ ij every second hour. The effects produced by this medicine were not very rapid, but still they were decidedly beneficial, for he gradually became calmer, wandered less, did not attempt to get out of bed, and, during the night, got some sleep. His bowels being confined, the mixture was now laid aside, and purgatives exhibited; I should have remarked that the tartar emetic mixture caused profuse sweating. On the fifteenth day of the fever, his bowels having

been acted on, he was ordered twenty drops of Battley's solution of opium at night, which produced a comfortable night's rest, the first he had enjoyed since his illness. On the sixteenth, the sweating continued, belly was fallen, and he was quite rational, but had marked subsultus; he got another dose of Battley, but it produced no sleep; he had been allowed chicken-broth, beer, &c., for some days. On the seventeenth day, the sweating had ceased, and his skin had become hot and dry; great restlessness, constant muttering, delirium, subsultus, tremors, picking the bed-clothes, involuntary discharges. Porter in small quantities, chicken-broth, fetid injection, and twenty drops of Battley at night. On the eighteenth, he was reported to have had no stool from the injection, and no sleep whatsoever, he answered incoherently, thought his bed was covered with lancets, some of which he collected carefully, and reserved for me; belly not tumid, but obstinately confined; pulse 100. The whole of that day, and the following, were employed in procuring alvine evacuations, preparatory to again giving opium; in the meantime, all his symptoms were aggravated, and when I visited him on the evening of the nineteenth day, his state was anxious in the extreme, as he had enjoyed no sleep for many days and nights, and was in a melancholy state of mental incoherence, raving, tremor, and subsultus. Here came the crisis as to treatment. I remember well the time when a patient so situated would have been again purged, his head would have been shaved, a few leeches applied to the temples, and a blister to the nape of the neck, while perhaps wine and musk would have been exhibited internally. How many persons have I seen so treated by the most eminent physicians, and how unsuccessful was the practice! To have talked of giving opium under such circumstances, and when the marks of cerebral congestion were so evident, would have been regarded absurd; my experience on former occasions, however, determined me to give opium, and, as the danger was imminent, I gave it boldly. To the eight ounce mixture, with four grains of tartar emetic, we added one dram and a half of laudanum; of this he took one ounce every second hour, from eight in the evening until he had taken five doses. This produced copious sweating; the skin became cooler, he raved less, but still no sleep; at four on the following morning, his pulse became 70, and respirations tranquil; he got twenty drops of Battley, and at half past five in the morning, twenty-five drops more. He had now taken, within a short time, about one dram of laudanum, and forty-five drops of Battley, combined with nearly three grains of tartar emetic. He was tranquil, but did not close his eyes, and muttered occasionally; subsultus less. His pupils now became more and more contracted, his eyes less expressive and duller, and when I came at eight in the morning, he was evidently deeply narcotised, although not yet asleep. I thought that all was lost; but still, observing the respiration to be tranquil, and the pulse regular, I indulged a faint hope that sleep might still supervene. His eyes now became still more inexpressive, the lids gradually closed, his breathing became pro-

longed and deep, and at half past eight he was buried in a profound and tranquil sleep, which continued for nine hours, when he awoke, spoke rationally, said he had no pain in the head, took some drink, and fell asleep again. Next morning not a single symptom of fever remained.

I need scarcely observe, that the proportions of the two powerful medicines which compose this mixture must vary according to the circumstances of the disease, and the age of the patient. In young persons of tender age, the opium must be given in smaller quantities.

There is one circumstance connected with this epidemic, but which I have also frequently witnessed in other sporadic and epidemic fevers, to which I wish forcibly to draw your attention; it is the existence of tenderness generally over the body, and which causes the patient to shrink from the pressure of the finger, applied to any part of the integuments. This tenderness arises from an irritated state of the nervous system generally, and is usually accompanied by severe dorsal or lumbar pain, indicating spinal congestion. Now, in a practical point of view, this tenderness requires attention; for if it be overlooked, and if the physician applies pressure, in such cases only, to the epigastrium, he will be deceived into the belief that the tenderness he there discovers is confined to that part, and indicates the application of leeches to the pit of the stomach.

You may observe that I have not yet spoken of the liquor of the chloride of soda, a remedy you have seen me order with such remarkable advantage in almost all the cases of spotted fever. It is my intention to devote an entire lecture to a consideration of the nature and properties of this medicine, so successful in the hands of myself and my colleague, Dr. Stokes.

Having spoken so much of the salutary effects of opium in certain stages of fever, it may not be irrelevant to our subject to introduce to your notice a remarkable case of violent enteric inflammation, attended, as such cases always are when exceedingly intense, with cholera-like collapse in the very onset of the disease. This case was saved by means of thirteen or fourteen grains of opium, given in the course of twenty-four hours, a plan of treatment which I first proposed, and which has since been very generally adopted.

I shall take the liberty of reading to you the following letter, from my friend Dr. Nolan.

My Dear Doctor,— The following is an abstract of my notes upon the case of my servant Horan:—

On Monday evening, 27th February last, he casually complained of pains in his bowels; they had not been freed on that day, and supposing it an instance of mere indigestion, I ordered him five grains of calomel, and a draught of castor oil. For that night I heard no more of him, but early on the following morning I was

hastily summoned by one of his fellow-servants, who reported that he was dying. I found him labouring under severe but intermitting pain of the belly, particularly about the umbilicus, *violent and frequent cramps*, especially in the lower extremities, and occasional vomiting. The surface was perfectly cold ; features sunken ; eyes surrounded by a dark areola ; voice subdued to a whisper ; pulse 140, small and feeble ; abdomen tender, though not at all tumid. He told me he passed the night in great torture, and that the bowels were still unmoved. I immediately ordered ten grains of calomel, to be followed in two hours by an oil and turpentine draught, a turpentine enema, bathing, &c.

Three hours subsequently—temperature restored ; cramps less violent ; vomiting less frequent, but bowels obstinate ; face and pulse equally unpromising as before ; abdominal pain increased. Was this incipient inflammation ? and what is the cure for inflammation ? Bleeding ? Well, I did bleed ; but scarcely had four ounces been taken, when I was very glad to tie up the arm ; the prostration alarmed me. Something, at all events, ought to be done, and I ordered a sinapism to the abdomen, a repetition of the enema (for I confess I have not much confidence in frequent or powerful purgatives), a powder, composed of calomel two grains, opium quarter of a grain, to be taken every fifteen minutes. Towards evening, I thought my patient rallied a little ; his countenance was better ; pulse firmer ; his abdominal pain not increased, and he vomited but once ; the injection brought away with it a little mucus, but no more. Repetat haustus terebinth. Repetat quoque enema. During the night, there was just a trace of feculent matter, but vomiting returned, and I found him in the morning (the second of his illness) suffering an increase of pain ; the abdomen, too, was now not only extremely tender, but *decidedly swollen* ; the pulse remained quick and weak as ever. I could not discover that he passed water. Would you not call this inflammation ? But would you bleed for it ? I did, unfortunately, to as great an extent as I could, which was about eight ounces, and the cadaverous look, the cold clammy surface, in short, the absolute collapse which succeeded, and *continued for hours*, gave me strong reason to regret it. *It produced no impression* upon the pain. I had read with great interest the invaluable observations of yourself and Dr. Stokes, as well as the publications of Armstrong, Griffin, Gooch, &c., wherein the applicability of opium, to certain modifications of abdominal inflammation, is forcibly demonstrated, and I thought my patient precisely in the condition in which you would probably have had recourse to that powerful agent. I, therefore, commenced exhibiting half a grain of opium, and two of calomel, every half hour. After the second hour, I substituted for the calomel three grains of carbonate of ammonia, which, with the opium as before, I continued during the day and the whole night. In the morning (the third) I had the satisfaction of ascertaining that the pain and swelling had considerably subsided, and that the

*bowels had been twice opened*; his countenance now spoke promisingly, and pulse began to fall. I, however, persevered in my plan of treatment for the day, and, indeed, for the two following nights and days, (gradually increasing the interval between each dose, however,) until all trace of pain and obstruction had disappeared. The bowels continued to act from time to time, although I never ventured upon another purgative; the dejections were at first largely mixed with blood and mucus, but soon assumed every character of health. Of the sequel (may be the consequence) of this interesting case, you most kindly undertook the management, and I shall add nothing to this meagre statement of *facts*, which Mr. O'Donnell, (of Keane's, in Suffolk street,) to whose humanity and care I am deeply indebted, witnessed as well as myself. I shall leave you to speculate upon the propriety of bleeding at all, under such circumstances. I shall also leave you to decide whether the increase of inflammation, which certainly occurred when I first gave up the opium plan (on the first night) for the sake of interposing a purgative, was to be attributed to the change or not. May not the case throw some light on the abuse or use of purgatives? But I am doing more than I intended, and more than is useful.

I remain, my dear doctor,  
Yours most truly,  
J. NOLAN.

April 19, 1835. — 10, College Green.

Let me now return to a subject concerning which I spoke lately, viz., the pulse. In the case of a young man named St. Leger, who was lately a patient at Sir P. Dun's Hospital, the variation of the pulse in different positions of the body was very remarkable. He was just recovering from fever, and exhibited a state of the pulse which is not unfrequently observed under similar circumstances. During his convalescence the pulse went on declining in frequency, until it sank to thirty-six in the minute. When I made him sit up in bed, his pulse began to rise rapidly, and, in the space of a minute, was at sixty-four. When he stood up it became much quicker, *but grew so weak and indistinct, that it could not be felt at the wrist.* On applying a stethoscope over the region of the heart, I found that its pulsations amount to 112 in the minute. Here is a very remarkable difference of pulse depending entirely on change of position. With respect to the number of respirations in this young man, I found that when lying down they were only fourteen, but when he stood up they were thirty. This is a very curious fact, and one which I have not before observed.

In this case, the pulse was very little more than in the proportion of two and a half to one, as compared with respiration, whereas it ought to be as four to one. We had another case at the hospital, in which the pulse was 84, and the respiration 42 in the same time in a minute; and a third case, in which the pulse was 120, while

the respiration was only twelve. I have myself seen one case in which the pulse was 60, and the respiration 50.

This variation in the relations which the pulse and respiration bear to each other, is principally observed in fever and pulmonary disease. I am at present attending a lady in fever, whose pulse was 120, and respiration 26, until within the last twenty-four hours, since which respiration has increased to 40, but the pulse has sunk to 86. Now, is this lady's state improved? Would you prefer having her in her present or past condition? For my part, I will say that in such a case I would rather have the pulse than the respiration accelerated. A quickening of the breathing in fever, without any particular lesion of the thoracic viscera, is always a proof that the muscular powers of organic life have been injured; that the diaphragm and respiratory muscles are impeded in their functions; and that the case is of a dangerous character.\*

I do not know any point on which accurate observations are more wanting than on the proportion between the pulse and respiration in various states of the system, and in various diseases. Facts upon this subject might be easily collected, and would probably lead to curious and instructive results. This would form an excellent subject for a monograph, and might be investigated by any student who possesses attention and perseverance, and has extensive opportunities for observation. Having touched upon the change in the frequency of the pulse produced by alteration of position, I may here remark that subsequent observations have confirmed the validity of the diagnostic mark which I was the first to draw from this circumstance in distinguishing functional from organic disease of the heart. The general proposition may now be considered as established, that in a debilitated person, when a sudden change of position makes little or no difference in the frequency of the pulse, we may conclude that the heart, or at least, its left ventricle, is increased in size and strength.

The following case of *acute inflammation of the œsophagus* is particularly worthy of your attention, on account of the extreme rarity of the disease, and because its symptoms have, for that reason, been either erroneously or imperfectly described by authors.

My friend, Dr. Mackintosh, in his Elements of Pathology, (vol. i. p. 228,) observes, "That of all the structures in the human body, the œsophagus is perhaps the least liable to disease. In general, it is difficult to detect inflammation of the œsophagus till ulceration and constriction take place. I have seen only one case of universal inflammation of this tube not caused by poison," &c.

It is no wonder, therefore, that the description Dr. Mackintosh gives of the œsophagitis is very imperfect. The same may be said of that given by others. The best description of the disease is that given by J. P. Frank, in his Epitome. If I recollect right, Abercrombie has recorded one well-marked case of œsophagitis. Strange enough, this disease is not spoken of at all in that excellent work, the Cyclopædia of Practical Medicine.

\* The lady referred to died.

The inflammation in the following instance was evidently the result of cold, and occurring in a healthy habit, it ran through its course in a few days. The case is in the gentleman's own words, for when the disease was cured I requested him to give me a short account of it in writing.

" February 24th, 1835.—For some days I felt as if I had caught cold, with something like sore throat. I felt as if the root of the tongue at the left side was sore. By degrees this extended downwards; a ring about the lowest part of the throat became painful on swallowing. The pain was most sensible at the left side.

26th.—I took a bit of bread before dinner, and, on attempting to swallow it perceived great pain from the commencement of the throat, proceeding downwards towards the chest, as if the bread was then impeded by something, and from thence it seemed to proceed with increased pain to the back between the shoulders. I felt no want of appetite at dinner, but the attempt to swallow caused considerable pain. The night was passed in a state of great restlessness, and with headache, violent pain sometimes seizing me on some little change of position, as it does in lumbago. The pain then seemed to affect the whole chest, and, extending to the back, caused a hot, burning sensation directly between the shoulders.

" 27th.—On attempting to swallow, I felt such pain as to force me to cry out as if the entire passage from the throat to the stomach was inflamed, and that everything, whether fluid or liquid, had to force its way painfully through the passage. In swallowing, it seemed doubtful whether the food could proceed."

So far the details were furnished by the patient himself. In addition I may remark that, on the 28th, the inflammation had evidently begun to diminish, and that in the course of a few days more it had entirely disappeared. The treatment was restricted to abstinence and antimonial diaphoretics. There was no redness to be seen in that part of the throat which is visible when the mouth is opened.

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## LECTURE XII.

Peresquinitrate of iron in chronic diarrhoea — Blueness of the fingers and toes in fever — Some account of the yellow fever which prevailed in Dublin in 1827 — Newly observed affections of the thyroid gland in females — Its connection with palpitation; with fits of hysteria — Erysipelas — Remarks on the formation of acidity of the stomach in indigestion — Psoriasis — Treatment by arsenic.

HAVING lately used, with very considerable success, a preparation introduced by Dr. Christison, namely, the peresquinitrate of iron, I shall make a few observations here on its properties and use.

The combination of iron with nitric acid forms a remedy possessing tonic, and, at the same time, astringent powers, and hence peculiarly well adapted for the treatment of certain forms of chronic

diarrhoea and dysentery. You will be consulted by females of a delicate and weakly habit, who frequently exhibit symptoms of nervous derangement, such as palpitations, sleeplessness, and headache, who are easily excited or alarmed, have a tendency to emaciation and paleness, and have little or no appetite. Combined with these general symptoms, you find that they have been labouring under diarrhoea for weeks, and even months, and that this, with the other causes of debility, has rendered their condition exceedingly uncomfortable. You will also be informed by the patient, that she has tried many remedies without benefit, and that she is extremely anxious to have something done to give relief; and hence it is a matter of importance to be acquainted with any remedy which may be likely to prove serviceable in such emergencies.

It would appear that this form of diarrhoea does not depend on an inflammatory condition of the stomach and intestinal canal, for the indications of inflammation are absent, such as pain, tenderness on pressure, thirst, redness of tongue, and severe or continued gripping. It would rather seem to be connected with congestion of the mucous membrane of the digestive tube of a passive nature, and resembling the scrofulous; it is also of an unmanageable character, and very seldom amenable to the ordinary modes of treatment. The common astringent remedies totally fail; chalk mixture, kino, rhatany root, and catechu, are useless, and in such cases it has been observed that opium is generally injurious. If you prescribe opium it certainly checks the disease for a time, but this temporary relief is accompanied by debility, malaise, restlessness, and many other uneasy symptoms, and the diarrhoea soon returns, and is as bad as ever. The medicine which I have found most effectual in such cases, is the persesquinitrate of iron, in the form recommended by Dr. Christison. With it I have succeeded, within the two last months, in curing two cases which had been exceedingly obstinate and of very considerable duration, the disease having in one case resisted all the efforts of medical skill for seven months, and in the other for two years. Seven or eight drops of the liq. ferri persesquinitratis, increased gradually to twelve or fifteen in the course of the day, was the quantity prescribed in both cases. In the course of four days a slight diminution of the diarrhoea was perceived, in a fortnight the patient felt much better, and in a month or five weeks it had disappeared altogether. This took place without being followed by any bad effects; there was no swelling of the stomach, no tympanitis, no tormina, no restlessness or nervous derangement; the patients recovered their health and strength, and the cure was at once safe and permanent.

The effect of this remedy admits of an explanation on either of two grounds. You are aware that nitric acid exercises a very powerful influence over many morbid discharges. In chronic diarrhoea or dysentery, and in a certain form of diabetes, it is one of the most efficient and appropriate medicines which can be prescribed. We can therefore understand its peculiar adaptation to

the case of which I have spoken. The nature of the complaint requires a tonic as well as an astringent; and you all know that nitric acid is used as a tonic in many cases attended with debility and emaciation. With respect to iron, its mode of action is equally intelligible. Many of the salts of iron exert a very remarkable influence on the conditions of mucous membranes. The sulphate, tartrate, and many other preparations, are prescribed with great advantage in chronic fluxes from mucous membrane; hence the benefit so frequently derived from the use of Griffiths' myrrh mixture in the treatment of chronic bronchitis characterised by a supersecretion from the bronchial membrane, unaccompanied by fever. You perceive, then, both the medicines which enter into the composition of persesquinitrate of iron as well calculated to check morbid discharges and strengthen the tone of the system. The only objection to this remedy is, that it is apt to spoil: if kept longer than a week it is decomposed, and hence you should always take care to have it quite fresh when you prescribe it, in order to secure its full operation.

I have lately had occasion to observe the good effects resulting from a combination of nitric acid with vegetable astringents, in a little girl three years of age, in whose case I was consulted by Mr. Wallace of Townsend street. She was of a strumous habit; her appearance was that of a delicate but not very sickly child, and, in spite of the long continuance of the complaint, she was active and lively, although her appetite was small. Four or five times during the day, and six or seven during the night, she was seized with a slight gripping pain, and a sudden desire to evacuate the bowels. Each evacuation was scanty, and consisting of muco-fæcal matter. A great variety of the usual remedies had been tried—alterative doses of mercury, purgatives, astringents, opiates, &c. I prescribed the following mixture, which had the happiest effect, and performed a speedy cure:

R Decocti hæmatoxyli (P. D.), 3 iv.  
 Vini rubri Lusitanici, 3 j.  
 Acidi nitrici dilut. gtt. x.  
 Tincturæ opii, gtt. v.  
 M. sumat. coch. j. medium, quater in die.

You will recollect that nitric acid, when given in large doses, often produces diarrhœa, as in the common combination of one dram of dilute acid with a pint of decoction of sarsaparilla.

A man in the fever ward, who has had fever in a very severe form, has latterly presented a tendency to have the circulation deranged in a very peculiar manner in certain parts of his body. Soon after his admission the tip of the nose became of a bluish-black colour, and within the last two days his toes began to assume a similar hue. This is a very curious symptom, and demands a few observations. Here we find a small portion of the skin of the nose becomes injected, the blood stagnates in the capillaries, the parts assume a blue colour, and a kind of morbid desiccation takes

place in the cuticle and a thin layer of the skin is thrown off, which is succeeded by the rapid formation of fresh cutaneous substance. In the toes the disease is also superficial: it does not engage the whole depth of the skin, or reach the subcutaneous cellular substance, and it is surrounded by a margin of a vivid red colour at the line of demarcation. In both places the parts are tender to the touch, but there is no swelling. It is therefore a superficial disease, not likely to be followed by the death of the parts affected, and differing in this respect from that form of gangrene in old persons which commences with a somewhat similar discolouration of the skin.

Now, whence arose the blueness in this case? It is difficult to give a satisfactory answer to this question, but we may arrive at something like a solution by examining the circumstances under which the superficial parts of the body undergo similar changes of colour. If you tie a thread round the first joint of the finger, you will observe that very soon after the circulation has been impeded, the top of the finger will become blue, and, in the same proportion, painful. Here we produce artificially a state of the top of the finger bearing a very remarkable analogy, so far as pain and change of hue are concerned, to the state of the nose and toes in this patient. Again, we find that without any artificial obstruction the influence of certain physical agents will generate in the vessels of various parts of the body a state of circulation closely resembling that which is the result of the impediment produced by art. Thus, sharp cold, as you all know, will produce blueness and a painful state of the integuments of the nose, fingers, and other parts of the body. I remember a very curious case of this kind which continued for a very considerable time; the patient was for several weeks in the Meath Hospital. He was a groom or helper in a livery stable, and being obliged to have his hands almost constantly in cold water at an inclement season of the year, the capillaries of the tips of the fingers in both his hands became so deranged in their condition, that they did not recover their proper degree of vitality and tone for many months. When he permitted his hands to hang for any length of time, or when they were exposed to the ordinary winter temperature of the air, the pain and blueness increased to a considerable degree, but if he held them up or plunged them into tepid water, the pain ceased, and the blueness became much diminished, or even went away altogether.

These considerations will furnish a key towards understanding the cause of the blueness in this case. With respect to the treatment, I may observe, that in such cases we have seen the best effects from artificially depleting that portion of the vascular system in which the local congestion and pain are seated. If a ligature were tied round your finger, and you wished to relieve the pain and reduce the congestion, without removing the artificial cause of the obstruction, you would apply leeches to the part, and thus give relief. It was on this principle that I was induced to apply

leeches to those parts in which a change of colour and an impairment of sensibility appeared to be connected with some obstruction in the capillary system. You will recollect that this man's toes were better after being leeched, and so far the practice appears to be borne out by the result of experience. You should not in such cases be led away by the theory of our ancestors, who referred this condition of parts to vascular debility. A vast deal has been said and written with respect to the state of the capillaries in disease; some say, that to restore the healthy action of a part we must debilitate; others that we must excite the capillaries. This point has engaged the talents of Dr. Thomson, Dr. W. Philip, and several other writers, but it still remains undecided, nor do I think it can ever be settled. For my own part I am satisfied with being able to discover the means of relieving disease, and give myself very little trouble about theoretical questions which seem, under existing circumstances, to be placed beyond the reach of human intellect. In the case before us, the modes which were most successfully employed were leeches, emollient poultices, and fomenting the parts with tepid water.

We do not often witness this blueness of the integuments in the fevers of Dublin; during the epidemic of 1827, however, it was a matter of frequent occurrence. That epidemic was also very remarkable in many other points of view; it was, if I may so express myself, a bad *gastro-typhus*. It was a fever in which the chief seats of congestion and disease were the stomach and small intestine; at the commencement the re-action of the system was exceedingly violent, but this subsided very quickly, and was followed by a stage of awful prostration. The chief interest, however, attached to it, arose from the circumstance of its forming a very striking link of connection between the ordinary gastric fever of Ireland and the yellow fever of warm countries. The phenomena which characterised this epidemic convinced me, and every one who witnessed it, that the common *gastro-typhus* of this country, and the yellow fever of America, Gibraltar, and other places, differ only in degree and not in nature. The disease set in with all the usual symptoms — violent heat of skin, a quick small pulse, sweating, restlessness, thirst, nausea, and abdominal tenderness; this state of things went on for two or three days, and then the patients became suddenly and universally jaundiced. The symptoms now began to assume a greater degree of malignity; vomiting came on; a large quantity of dark-coloured substance, resembling coffee-grounds, was thrown up, and the case most commonly had a fatal termination. Here, you perceive, we had yellow fever with black vomit. I examined the bodies of about twenty-five persons who died in this hospital, and found that the intestinal canal presented an exact fac-simile of the morbid appearances described by Jackson, Bancroft, and various other writers on yellow fever.

In that fever I had frequent opportunities of observing the change in the capillaries of the part, which accompanied the appearance of

blueness of the nose. To a person who saw the patient with his nose of the natural hue this morning, and found it quite blue on the next, the change appeared strange and unaccountable; but, as I spent a great portion of my time in the wards, I had an opportunity of marking the transition, and detecting the modifications which preceded blueness. The part about to become blue became altered in a very singular manner. It first became elevated in its temperature, but at the same time it grew paler. I cannot explain this. Increased heat would seem to prove the existence of increased vascularity — fading of colour would seem to prove decrease of vascularity. Notwithstanding this, these apparently incompatible states co-existed; the parts were blanched, and at the same time felt hot to the touch. Where the nose was about to become blue, it first assumed a yellowish-white colour, and looked very like a wax nose; in the course of six or eight hours this appearance subsided, and it became red; and after a short time this colour was replaced by a purple or dark blue tinge. The same order of phenomena took place with respect to the toes, and in a few cases the disease appeared in the fingers. Such cases were ordinarily accompanied by so bad a state of febrile symptoms, that the patients seldom recovered; indeed, they died so soon after its supervention, that we had no opportunities of observing what course it would take, or how it would terminate. The appearance which patients labouring under this affection exhibited, was very extraordinary; they were all deeply jaundiced, and the deep yellow of the face made a singularly hideous contrast with the indigo blue of the nose.\*

With respect to the vomiting a substance resembling coffee-grounds, so frequently observed in this epidemic, I may state that it appeared to be identical in its nature with the black vomit of yellow fever. You are aware that the matter rejected under such circumstances is produced by an oozing of blood from the surface of the stomach and duodenum. A quantity of blood is poured out from the diseased surface of the mucous membrane of the stomach; this remains in the stomach for some time, and coagulates; the secretions of that organ act on it, and change it to a black colour, in which state it is thrown up. This is the case in yellow fever; and such also was the origin of the black vomit in the fever of 1827.

I may observe, that in that epidemic, as well as in the present, a close inquiry into the history of numerous cases has convinced me that the gastro-typhus of this country, as well as the yellow fever of warmer latitudes, may arise spontaneously, and be propagated by contagion. This, I believe, is a fact which every physician who has seen much of fever has not the slightest doubt of. We have all repeatedly seen instances of persons catching cold while the system was in a relaxed or debilitated state; we have seen this cold followed by violent feverish symptoms, and we have observed

\* The remarkable epidemic fever of 1827 was described in a monograph printed by me and Dr. Stokes for the use of the students of the Meath Hospital.

these symptoms pass gradually into fever of a typhus character, and capable of being propagated by contagion. So many examples of this have now occurred, that there can be no doubt that fever may arise spontaneously—that it may become in this way sporadic, and finally epidemic. At certain periods, it appears to be a matter of very little consequence, with regard to the mass of society in general, how many sporadic cases of this description may occur; but at other periods, and under a certain state of atmosphere, the disease becomes extensively diffused, and assumes the character of an epidemic. Here each individual case proves a centre of contagion, from which the disease spreads on every side. On the other hand, fever may originate spontaneously, assume a typhoid character, and yet produce no contagion. Recollecting these circumstances, you will be able to reconcile the conflicting opinions of those who have argued so hotly respecting the nature of yellow fever; some asserting that it is always contagious—others, never. The fact is, that both are right and both wrong; fever may originate spontaneously and without contagion, but it may also be produced by contagion, and it may, under one class of circumstances, run through its course without being communicated to others; whereas, under a different state of things, each case becomes a centre from which the disease spreads on every side. In the present epidemic of maculated or spotted fever, the contagious nature of the disease was strongly exemplified—for more than twenty of the students, who were in the habit of visiting the fever wards in the Meath Hospital, were attacked with spotted fever in the course of two months. Although the disease was very violent in many, and serious in all, Dr. Stokes and I lost but one of these students; we had every reason therefore, to congratulate ourselves on the success of the treatment we employed. I shall return to this subject hereafter.

I have lately seen three cases of violent and long-continued palpitations in females, in each of which the same peculiarity presented itself—viz., enlargement of the thyroid gland; the size of this gland, at all times considerably greater than natural, was subject to remarkable variations in every one of these patients. When the palpitations were violent, the gland used notably to swell and become distended, having all the appearance of being increased in size, in consequence of an interstitial and sudden effusion of fluid into its substance. The swelling immediately began to subside as the violence of the paroxysm of palpitation decreased, and during the intervals the size of the gland remained stationary. Its increase of size, and the variations to which it was liable, had attracted forcibly the attention both of the patients and of their friends. There was not the slightest evidence of anything like inflammation of the gland. One of these ladies, residing in the neighbourhood of Black Rock, was seen by Dr. Harvey and Dr. William Stokes; another of them, the wife of a clergyman in the county of Wicklow, was seen by Dr. Marsh; and the third lives in Grafton

street. The palpitations have in all lasted considerably more than a year, and with such violence as to be at times exceedingly distressing; and yet there seems no certain grounds for concluding that organic disease of the heart exists. In one, the beating of the heart could be heard during the paroxysm at some distance from the bed — a phenomenon I had never before witnessed, and which strongly excited my attention and curiosity. She herself, her friends, and Dr. Harvey, all testified the frequency of this occurrence, and said that the sound was at times much louder than when I examined the patient, and yet I could distinctly hear the heart beating when my ear was distant at least four feet from her chest? It was the first or dull sound which was thus audible. This fact is well worthy of notice, and when duly considered appears to favour the explanation, lately given by Magendie, of the causes of the sounds produced during the heart's action; for none of those previously proposed seem to me capable of accounting for a sound so loud and so distinct. But to return to our subject. The sudden manner in which the thyroid, in the above three females, used to increase and again diminish in size, and the connection of this with the state of the heart's action, are circumstances which may be considered as indicating that the thyroid is slightly analogous in structure to the tissues properly called erectile. It is well known that no part of the body is so subject to increase in size as the thyroid gland, and not unfrequently this increase has been observed to be remarkably rapid, constituting the different varieties of bronchocele or goitre. The enlargement of the thyroid, of which I am now speaking, seems to be essentially different from goitre in not attaining a size at all equal to that observed in the latter disease. Indeed, this enlargement deserves rather the name of hypertrophy, and is at once distinguishable from bronchocele by its becoming stationary, just at that period of its development when the growth of the latter usually begins to be accelerated. In fact, although the tumour is very observable when the attention is directed to it, yet it never amounts to actual deformity. The well-known connection which exists between the uterine functions of the female and the development of the thyroid observed at puberty, renders this affection worthy of attention, particularly when we find it is so closely related by sympathy to those palpitations of the heart which are of so frequent occurrence in hysterical and nervous females.

Another fact well worthy of notice is that females liable to attacks of palpitation almost invariably complain of a sense of fulness, referred to the throat, and exactly corresponding to the situation of the thyroid. This sensation only continues while the paroxysm of palpitation lasts, and frequently is so urgent as forcibly to attract the patient's notice, who now complains of its inducing a sense of suffocation. Here the interesting question occurs, whether this feeling of something that impedes the respiration at the bottom of the throat, during the hysterical fit, and which has been included under the general term *globus hystericus* — the question arises, I say,

whether this feeling is always of purely nervous origin. To me it appears probable that it is often induced by the pressure arising from a sudden enlargement of the thyroid, which enlargement subsides as soon as the fit is over. Of this I am certain, that the lump in the throat, of which such females complain, is often exactly referred to the situation of the thyroid; and, indeed, I have been told by other practitioners, upon the accuracy of whose observations I can rely, that this swelling in the throat of females during the hysterical paroxysm has more than once excited their wonder. It is obvious that if palpitations depending on functional disease of the heart are capable of exciting this swollen state of the thyroid, we may expect to observe the tumefaction of this gland also where the palpitation depends on organic disease of the heart, as in the following case detailed to me by a friend.

A lady, aged twenty, became affected with some symptoms which were supposed to be hysterical. This occurred more than two years ago; her health previously had been good. After she had been in this nervous state about three months, it was observed that her pulse had become singularly rapid. This rapidity existed without any apparent cause, and was constant, the pulse being never under 120, and often much higher. She next complained of weakness on exertion, and began to look pale and thin. Thus she continued for a year, but during this time she manifestly lost ground on the whole, the rapidity of the heart's action having never ceased. It was now observed that the eyes assumed a singular appearance, for the eyeballs were apparently enlarged, so that when she slept, or tried to shut her eyes, the lids were incapable of closing. When the eyes were open, the white sclerotic could be seen, to a breadth of several lines, all round the cornea. In a few months, the action of the heart continuing with unceasing violence, a tumour, of a horseshoe shape, appeared on the front of the throat and exactly in the situation of the thyroid gland. This was at first soft, but soon attained a greater hardness, though still elastic. From the time it was first observed, it has increased little, if at all, in size, and is now about thrice the natural bulk of the fully developed gland in a female after the age of puberty. It is somewhat larger on the right side than on the left. A circumstance well worthy of notice has been observed in this young lady's case, and which may serve to throw some light on the nature of this thyroid tumefaction. The circumstance I allude to is, that from an early period of the disease a remarkable disproportion was found to exist between the beats of the radial and of the carotid arteries, the pulsations of the former being comparatively feeble, while those of the latter were violent, causing a most evident throbbing of the neck, and accompanied by a loud rustling sound. In about fourteen months the heart presented all the signs of Laennec's passive aneurism; the tumour in the neck is subject to remarkable variations in size, sometimes diminishing nearly one-half. None of her family have

had goitres, nor was she ever in any of the usual localities of the disease.

Some time ago, you will recollect, we had a case of erysipelas in a young woman, which came on towards the termination of fever; a similar occurrence has taken place in a patient in the male fever ward. A man who has been for some time labouring under fever, got, about two days since, an attack of erysipelas of the scalp, spreading downwards over the neck and shoulders. The man had been ill of fever of a nervous type, and unaccompanied by any decided marks of visceral congestion; his condition was to a certain extent modified by previous habits of intemperance, but still his strength was not much prostrated, nor did he appear to be in a very dangerous state. About the fourth week of his illness he gets an attack of erysipelas of the scalp, which runs downwards over the neck and shoulders, and threatens very dangerous if not fatal consequences. How were we to treat this case? The man's constitution, habits, and the period of his fever, contra-indicated depletion in any form, and the only thing which we could expect benefit from, was the use of sulphate of quinine, which we had prescribed in two former cases of this kind with good effects. We gave it here, also, in the form of an enema, for the state of the man's stomach was such as to preclude the possibility of giving it by the mouth without hazard. An enema, composed of five grains of quinine, five drops of laudanum, and two or three ounces of mucilage of starch, was injected three times a day. I cannot as yet state what the result of this case may be, but the disease is certainly not progressing, and the man says he feels better to-day, so that there are grounds to hope for a favourable termination.

Internally I have given the man magnesia with camphor mixture, on an empirical principle. It has been stated by some of the older writers, that when erysipelas occurs in a weak habit, or supervenes on other diseases, that there is an acescent condition of the stomach, and that it is on this condition the erysipelatous tendency chiefly depends. I have with this view been induced to try the exhibition of small doses of magnesia; I have ordered a mixture composed of six ounces of camphor mixture with a dram of magnesia, of which the patient is to take an ounce every second hour.

I may take this opportunity of observing that, since I published some remarks in the Dublin Medical Journal, upon the occasional symmetrical march of erysipelas at both sides of the median line, I have seen other examples of this symmetry. One occurred very lately in Sir P. Dun's Hospital, in a woman in whom the point of departure for the disease was the face. From this, the erysipelas spread over the scalp, and then advanced downwards over the neck and shoulders. During its daily progress, I pointed out to the students how precisely its outline at one side of the median line corresponded with that at the other. This coincidence was the more singular, for the boundary of the advancing erysipelas was at each side very irregular in form. I think, therefore, that more

accurate observations on this subject will cause a change of opinion in the mind of a learned reviewer in Johnson's Medico-Chirurgical Review.

There is another case, in which I gave magnesia to a man labouring under a particular species of indigestion. He had been for a long time suffering from chronic rheumatism, and this was combined with dyspepsia, characterised by a tendency to supersecretion of acid in the stomach, with gastrodynia and sour eructations. In addition to anti-rheumatic medicines, and enemata to keep the bowels open, we prescribed the subnitrate of bismuth with magnesia, for the purpose of relieving pain and acidity. In gastrodynia, with increased secretion of acid from the stomach, one of the best remedies we possess is the subnitrate of bismuth, with which I am in the habit of combining morphia, or, as in the present case, magnesia. I ordered ten grains of magnesia, twenty of powdered gum arabic, and six of the subnitrate of bismuth, to be taken two or three times a day, according to circumstances: this powder was to be followed by a tablespoonful of water, containing one-sixteenth of a grain of muriate of morphia. In such cases, if milk does not disagree with the patient, you may pour the powder into a quantity of boiled milk; allow it to cool, and then stir it with a spoon, and make the patient swallow it. The gum arabic is used for its demulcent properties, and because it enables the patient to swallow the powder with more facility; and the fluid in which you mix the powder, whether it be water or milk, is to be used warm in order to dissolve the gum more speedily. This is a very good combination, and I have seen many cases of dyspepsia, with acid eructations, which had resisted bismuth, prussic acid, or morphia, given singly, yield to it.

I need not state to you the reasons why magnesia and other antacid remedies are given in such cases, but it may be necessary to mention briefly the principle on which opiates are prescribed. Dr. Elliotson has shown, that many of the morbid states of the stomach depend on deranged nervous energy, and that in such cases the most efficient means we can use are narcotics. As to the subnitrate of bismuth, its mode of action is not very obvious; but we know that the metallic salts possess great influence over various nervous diseases, as well as over morbid secretions. Witness the effects of carbonate of iron, oxide of zinc, the preparations of arsenic and antimony, and several others. On this account we prescribed the subnitrate, hoping to derive some benefit from its use, as well with respect to checking the sour eructations, as to relieving the gastrodynia. It may be well to make a few observations in explanation of the manner in which tonics and narcotics act in diseases of the stomach. Formerly physiologists were of opinion, that in weakly stomachs the act of digestion was accompanied by the formation of acid and flatulence, because the food being imperfectly acted on was allowed to undergo the process of fermentation, a process which gave rise to the acid and the wind in the stomach.

In compliance with this view, physicians endeavoured to procure relief in these cases by prescribing a regimen little likely to undergo a fermentation capable of causing a production of either air or acid; and they endeavoured to neutralise the bad effects of these, when produced by means of the administration of alkaline medicines. They used, however, to be astonished at observing that many articles of food, which outside the body never formed any acid during fermentation, (or more properly putrefaction,) occasioned, nevertheless, when eaten, as much acidity in the stomach as any other aliments.

It was remarked also by practical men, that although present relief was obtained by means of alkalies, yet their constant exhibition seemed rather to increase than diminish the tendency of the formation of acid in the stomach. This fact could not be explained in the then state of physiology. In the year 1821, I read an essay on this subject before the Association of the King and Queen's College of Physicians, in whose transactions it was subsequently published. In this essay I pointed out the true source of the acidity and flatulence observed in dyspepsia, and proved, contrary to the received opinions, that it was the result of a morbid secretion. In fact, I showed that the stomach has the power, when in health, of secreting acids and air, both essentially necessary for the solution of the alimentary mass; and I proved that in dyspepsia this power is morbidly deranged, in such a manner as to give rise to a supersecretion of acids and air. This view of the subject was soon recognised to be correct, and, in consequence, new methods of treating dyspepsia were proposed. Among the proposals for obviating acidity, that of Dr. Elliotson, who recommended prussic acids and other narcotics capable of acting upon the nerves of the stomach, (through the influence of which secretion is effected,) was found to be the most successful, and has been sanctioned by the most extensive experience.

Before I conclude, I shall call your attention to the case of Ellen Farrow, who has been for a considerable time labouring under extensively diffused psoriasis. She was admitted about the beginning of last November, and we are now come to the 10th of December; so that she has been a patient here for nearly six weeks. Her disease is of better than two years' standing, and the eruption covered almost every part of the surface of the upper and lower extremities, the trunk remaining unaffected. The patient, you perceive, is a fine healthy country girl, and though the complaint has lasted so long, her system does not seem to be in the slightest degree impaired, appetite, digestion, and sleep are perfectly good. Now, on examining her soon after her admission, you will recollect that I told you that the duration of the disease, the absence of constitutional irritation, and of irritation in the parts affected by psoriasis, all contra-indicated a mode of treatment which frequently proves highly useful, namely, the antiphlogistic. If called to a case in which the disease was recent, and attended with heat of skin, red-

ness and itching, I would bleed, leech the affected parts, and put the patient on a spare diet. Even in some cases of a chronic character, this treatment may be employed with great advantage. Here, however, the state of the patient was such as not to require antiphlogistics, and accordingly we put her on the use of Fowler's arsenical solution. By the way, when you give this remedy in private practice, where patients or their friends are very curious in scanning your prescription, you may, in order to prevent alarm, or have the action of the medicine interfered with, write on your prescription — "Liquor mineralis Fowleri."

I mention this case of Farren's chiefly for the purpose of showing the extent to which the arsenical solution may be carried. Mind, I do not mean to boast of the quantities of medicine my patients swallow. Some persons appear to think that there is something very brilliant in prescribing enormous doses: I should, however, be very sorry to make such experiments. Arsenic is a very powerful remedy, and its effect on diseases of the skin can be amply secured by moderate doses; where these fail, it is very often from not continuing the use of the remedy for a sufficient length of time. Latterly this girl has been taking ten drops of Fowler's solution three times a day, and, as she is getting well, I do not intend to increase the dose. We began with three drops three times a day: after a few days this was increased to five, and then to seven drops three times daily. She then began to take ten drops three times a day; but after a few days having got an attack of shivering, followed by symptoms of feverish excitement, and herpes labialis, we stopped the arsenic for five days, and then began to give it again in small doses, which were gradually increased until we came to the quantity she is taking at present. Whenever you have a patient under the use of arsenic, you must never omit making daily inquiries as to the state of the head and stomach; if the patient complains of gastrodynia or nausea, if there be pain or giddiness of head, or if, these being absent, a state of feverishness or general nervous excitement supervene, it is a proof that the remedy has been pushed sufficiently far, and under such circumstances you should suspend or give up its employment. In this case, being unwilling to give up the use of arsenic, as it appeared to be curing the patient, I merely suspended it for a few days, and then had recourse to it again. In order, however, to prevent it from acting unfavourably on the stomach, I have latterly prescribed it in the following form: —

R. Liqu. arsenicalis,  $\text{m}_\text{c}$  x.  
Aqua distillatae,  $\mathfrak{Z}_\text{J}$ .  
Tinct. opii,  $\text{m}_\text{c}$  x.  
Spirit. lavandulæ, compos.  $\mathfrak{Z}_\text{ss}$ . — ft. haust.

This appears to agree very well with the stomach; and as she is improving very rapidly, I intend to continue it for some time without increasing the dose.

The only other point worthy of remark in this case is, that we observed in it a phenomenon connected with the state of the skin,

such as usually occurs when a patient is using sulphur or sulphureous waters for the cure of chronic cutaneous affections. After they have been taking these remedies for some time, they experience a slight exacerbation of symptoms, and complain that the eruption is growing worse. This, however, should never induce you to give up the remedy without further trial; for this temporary aggravation generally precedes the disappearance of the disease.

We dismissed a case of dysentery lately from our wards, concerning which I promised to make a few observations. During the months of August and September last, we had in Dublin several cases bearing a decided analogy to the dysentery of Cullen. There, were fever, griping, tenesmus, a constant inclination to go to stool, without being able to pass anything but a little mucus and blood, and occasionally scybala. In this form of disease, some authors are inclined to attribute all the bad symptoms to the presence of these scybala, which are small hard lumps of faecal matter, evidently formed in the sacculi of the great intestine. You will find others asserting that this cannot be the case; for in many dysenteries there are no scybala at all, and that, even when they do occur, they have no connection with the disease. The latter take no account of scybala, while the former state that the diseased condition of the intestine depends upon the irritation produced by them, and that you never can expect to cure the disease without getting rid of them by active purgatives. For my part, I believe that there are certain dysenteric states of the great intestine, in which the main cause of the disease arises from the lodgment of quantities of hard, unhealthy, and long retained faecal matter; but in cases of epidemic dysentery, I do not think that scybala have anything to do with the formation of the disease, or the aggravation of its symptoms.

In the present case, the affection appears to have been pure rectile dysentery, depending almost exclusively on inflammation of the rectum, not extending to the sigmoid flexure of the colon, and certainly never as far as its arch. The symptoms present were fever, increased heat of skin and quickness of pulse, with a feeling of heat and pain in the situation of the rectum; for the first day the discharges consisted of mucus and blood, combined with faecal matter, but after this the mucus and blood were voided alone with great griping and tenesmus, and the patient was obliged to get up to the night chair thirty times in the course of twenty-four hours. There was, however, no symptom indicating that any portion of the intestine beyond the rectum was affected. Now, what was the consequence of this state of things? The inflammation of the rectum gave rise to constant spasm of that organ; the colon partook more or less in its spasmodic action, and hence every attempt to pass the stools was resisted. Here, however, the faeces lay in a portion of the intestine free from inflammation; they could not produce any aggravation of the symptoms, and the scybala were to be looked on as the consequence and not the cause of the disease. Now, whe-

ther purgatives were given by injection, or by the mouth, they would have done no good in such a case as this; we might have copious faecal discharges, but without the slightest diminution of the local symptoms. I do not mean to say that there are not dysenteries in which purgatives are highly useful, but in the case before us, where the disease was limited to the rectum, I did not think that any benefit could be derived from them. I confined my attention, therefore, entirely to local means directed to the part inflamed, applied leeches to the anus, gave narcotic and emollient enemata, and after I had in this way relieved pain and irritation, I combined with the enemata, first, a small quantity of the acetate of lead, with the view of restoring the tone of the relaxed mucous membrane, and afterwards changed it for the sulphate of zinc. Under this treatment the case went on very favourably, and we have been able to dismiss the man in a very short space of time.

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### LECTURE XIII.

Case of long continued nervous fevers; remarks on — Pleuro-pneumonia — Cases of latent pleurisy; of pneumonia — phthisis; latent ulceration of the bowels in — Diarrhoea of phthisis — Observations on the stammering of paralytic persons — Its explanation — Very remarkable case of stuttering cured by chronic laryngitis — Treatment of hoarseness — Velpeau's new method of treating sore throat.

PERMIT me to make one or two observations on a case of which I have already spoken, and which, as I expected, has terminated fatally. A man, named Lynam, has been lying ill for a long time in the large fever ward; I wrote at the top of his card "Nervous Fever," and remarked to the class, that his disease was pure fever of a nervous type, unaccompanied by any symptoms indicating decided local inflammation. You will recollect that his symptoms were heat of skin, quick, weak, compressible pulse, thirst, watchfulness, and low muttering delirium, unattended by any appreciable sign of visceral disease, or any symptoms denoting a putrescent state of the fluids. It was not congestive or putrid, or gastro-enteric, or petechial fever; neither could it be called a cerebral fever; it was only by separating from it the idea of each of these species, and by studying its negative characters, that you could arrive at something like an accurate conception of the type of the disease. It was, as I have already stated, nervous fever, modified by the patient's previous habits of long continued intemperance. When a patient, addicted to intemperate habits, gets an attack of fever from cold, fatigue, or exposure to contagion, you will generally find the disease will exhibit a compound or mixed character, the phenomena of fever being combined with those of delirium-tremens. And so it was in this case; the man had general tremors, with persistent watchfulness, and muttering delirium.

His treatment consisted in the employment of medicines calculated to soothe the nervous system, and I kept a constant watch over the state of the principal viscera. About a week after he came under my care, and about five weeks from the commencement of his fever (for he was nearly a month ill before he came to the hospital), he was attacked with erysipelatous inflammation of the face and scalp. The disease commenced on the face, and, traveling upwards, very rapidly attacked the whole scalp and back of the neck, its progress being accompanied by great aggravation of symptoms. At that time I remarked to the class that I did not entertain any apprehensions of a metastasis of the erysipelas, that I had no fears of the supervention of inflammation of the brain, and its train of alarming consequences; but that no good was portended by this attack of cutaneous inflammation, and no relief of the internal parts could be expected from it, for every symptom appeared aggravated from the moment that the erysipelas commenced. I pointed out the total inadmissibility of anything like vigorous or antiphlogistic treatment, in a case where the disease had appeared in an individual of broken constitution, labouring under a combination of delirium tremens with low fever; and said that even the remedy which we had found most successful in similar cases, namely, sulphate of quinine and opium, offered but a feeble hope of arresting the malady. It failed, as we expected, and the man died yesterday, worn out by long suffering and exhaustion. Eighteen hours after death we made a most careful examination of all the viscera of the three great cavities; not a single organ exhibited the least mark of inflammation; we could not find anywhere even the slightest trace of local congestion. The man had all his viscera in an apparently sound and normal condition, and died of pure nervous fever.

Some persons look upon the existence of fever independent of topical affections as purely imaginary, and deem those, who have recorded such forms of disease as too ignorant, or too lazy, to make the necessary pathological investigations. I have not time at present to enter into this subject, but of nothing am I more convinced than that fever may exist without any appreciable local lesion, that it may affect every organ and every tissue of the body alike, and yet that the most accurate symptomatologists cannot lay his finger on any one single part and say, here is local inflammation of a decided character. I have met with many instances confirmatory of this fact in hospital practice. I recollect a case which occurred some time ago at this hospital, which was equally remarkable for its extraordinary duration, as for the total absence of any thing like visceral lesion. The patient was admitted into the small fever ward, labouring under an attack of nervous fever; he had thirst, hot skin, pulse from 110 to 120, occasional delirium and watchfulness, and these symptoms went on week after week, and month after month, unaccompanied during the whole course of the disease by any phenomena indicating the existence of local inflam-

mation. His treatment was purely expectant and temporising; we had no cerebral, abdominal, or thoracic lesion to combat; there was no organ in which the febrile derangement could be said to have fixed itself exclusively, no threatening disorganization calling for the prompt employment of new and energetic means. At last, after the fever had continued for very nearly three months, the man complaining all the time of more or less thirst, hot skin, watchfulness, and headache with occasional delirium, the disease terminated in a well marked crisis, accompanied by sweating. He fell asleep, began to perspire, awoke with a pulse nearly reduced to the natural standard, and perfectly recovered. I may observe that I have never seen fever last so long as this, nor have I ever observed a perfect crisis in any case after the forty-second day. Some time ago I attended the brother of a gentleman now present, who had a long and very severe attack of fever; though he never had a remission during his illness, and was in very urgent danger, he got a perfect crisis with profuse perspiration on the forty-second day, and is now in the enjoyment of excellent health.

You perceive, then, that the case of Lynam presents some circumstances worthy of notice. His fever went on to its termination without any symptoms of inflammation in any viscous, and his actual condition, as carefully ascertained by an accurate post-mortem examination, affords a useful lesson to the pathologist. His case is also interesting in showing how previous habits will modify, in a remarkable degree, the character of fever; for in him you have seen fever combined with the phenomena of delirium tremens, a state of things which it was natural to expect in a man of extremely intemperate habits. The termination of the erysipelas without any sign of disorganization within the cranium is also worthy of notice. In such cases you have it frequently followed by inflammation of the brain and its membranes, and an exudation of pus on the surface of one or both the hemispheres; but here you perceive that there has been no extension of the disease, or nothing that should have induced us to give up the plan of treatment we adopted, and direct our therapeutic means to the head.

Let me now direct your attention to another topic. You have seen that a principal feature in the character of the present pneumonia is its complication with pleuritis; we have had several cases of inflammation of the lungs, combined with inflammation of their investing membranes, but I do not recollect that we have had a single case of pure pleuritis, or pure pneumonia. In the patient who lies at present in the chronic ward, labouring under pleuro-pneumonia, the inflammation occupied the superior part of the right lung in the first instance, and this is rather remarkable, as pneumonia generally commences in the lower part of the lung. Here, however, the pneumonia and pleuritis were located above, each being in point of extent nearly of the same dimensions, the portion of inflamed lung corresponding in its area to the portion of pleura engaged in the disease. Soon after his admission we

found that the inflammation was making further progress, but its spreading was attended with this remarkable peculiarity, that while the pleuritic inflammation in the superior part of the right side of the chest became limited and ceased to extend itself, the pneumonic inflammation commenced traveling downwards and backwards, so that after two or three days we had pleuro-pneumonia in the upper part of the lung, and further down in the lower and back part of the lung it was merely pneumonia unaccompanied by pleuritis. This is an occurrence which I have frequently witnessed, that when pleuritis and pneumonia co-exist, the latter will spread, often in spite of all our efforts, while the former remains stationary. I wish to impress this fact on your minds, that pleuritis never exhibits such a tendency to extend itself gradually, day after day, as pneumonia; if the pleura becomes inflamed, the extent to which it is likely to be engaged will be determined in twenty-four hours; whereas, in cases of pneumonia, the disease, though limited at the commencement to one or two small insulated spots, will frequently begin to extend in every direction from these points, until in the course of a few days it involves a large portion of the lung. In other cases, many days are required before the spreading of pneumonia ceases.

This case is of considerable interest to the stethoscopic student, as exhibiting in a very satisfactory manner all the physical signs of pneumonia, as well in its pure state as where it is complicated with pleuritis. It is unnecessary for me to enter into any detail of the symptoms or of the physical signs, but I invite you to study them as well worthy of your attention.

A patient has recently died, who came into hospital labouring under a disease which generally proves fatal, namely, double pleuro-pneumonia. He had violent pleuritis and pneumonia in both sides of the chest under these peculiar circumstances; that in the left side the pneumonia was situated above and anteriorly, in the right side below and posteriorly; so that the lungs were affected nearly at the opposite ends of their transverse diameters. On his admission, he appeared extremely low and weak, and it was obvious that the case must terminate fatally. His respiration was extremely quick and laboured; he had great oppression about the chest, constant anxiety, incessant harassing cough, quick weak pulse, and a countenance expressive of intense suffering. On examining the chest with the stethoscope, we found that both lungs were extensively solidified; and this, combined with his age, and the manifest sinking of the powers of life, prevented us from indulging in any hope of being able to arrest, much less to remove, his complaint. He was a poor creature, moving in the very lowest class of life, ill-fed, without sufficient clothing, most wretchedly lodged, and constantly exposed to cold and hardships. He had been employed in breaking stones on a road at fourpence per day, and out of this miserable pittance endeavoured to maintain a family. From repeated exposure to inclement weather, he got a violent

attack of pleuro-pneumonia, which, being neglected at the commencement, assumed an intractable character, and when he came into hospital, the disease had been of several weeks' standing, his system reduced to the lowest state, and no sign whatever of reaction.

In estimating the danger of a patient labouring under pneumonia, I have told you that it is not so much in proportion to the extent of lung engaged, as to the quickness of respiration, and the presence or absence of symptoms of asphyxia. You will see one man in pneumonia, having nearly the whole right or left lung inflamed and solidified, breathing easily with the other lung, and apparently suffering but little inconvenience; while you will find others, with a smaller amount of disease, exhibiting symptoms of distress bordering on asphyxia. I attended a young gentleman eighteen months ago, who had complete carnification of the left lung, and pleuritic effusion on the same side, pushing the heart so far out of its place, that it could be felt pulsating under the right mamma. His illness lasted for nearly four months; yet the fluid was afterwards completely absorbed, the lung gradually assumed its natural condition, and he recovered perfectly. About six months ago, I was again called to see him, and found that after exposure to cold he had got a violent attack of pneumonia in the right lung, which had run on to hepatisation, and on examining him by the stethoscope and percussion, I found that almost the whole of the lung was solidified. In this case, there never was anything like an approach to asphyxia; indeed, the distress of breathing was extremely slight, and he recovered completely in two months. This was rather a singular case; the patient one year getting violent pleuritis, followed by extensive effusion, forcibly compressing the lung so as to render it quite useless, and pushing the heart out of its place; and the next year getting an attack of pneumonia in the other lung, ending in solidification of nearly the whole organ, and yet recovering completely from both. I need not say that there could have been no scrofulous taint in this gentleman's constitution, for if there had, the chances were that he would have sunk under either of these attacks. He lives at Crumlin; and in both instances his attending physician was Dr. Adams, of Stephen's Green.

In such a case as this, the utility of the stethoscope was obvious; by its means we not only learned the nature and extent of the disease we had to combat, but also the exact situation where topical applications, such as leeches, blisters, setons, &c., should be applied with greatest advantage. I had lately an opportunity of witnessing an extremely interesting case of perfectly latent pleurisy. It was seen in the first instance by my friend and pupil, Mr. B. Guinness. A fine young gentleman, catching cold, contracted some slight fever, apparently catarrhal, which altogether subsided in five or six days, but he remained very weak. I saw him on the tenth day; a very slight cough remained, his breathing was regular, and he felt no want of breath; he had had no pain in the side from the commencement; he was weak and rather sleepless; otherwise he could

specify no complaint. I do not know what induced me to percuss his chest — perhaps it was the force of habit: be this as it may percussion led me to the discovery of extensive pleuritic effusion on the right side. He recovered perfectly under the use of proper remedies.

Let me now direct your attention for a few moments to the case of M. Murphy, who died on Saturday last. This man, aged sixty, was admitted on the first of November. He had been ill for nine months before his admission, and stated that his illness originated in exposure to cold. It commenced with cough, oppression of chest, dyspncea, and haemoptysis. During the first month, the haemoptysis recurred frequently, and, as he thought, generally with more or less relief; but during the latter period of his illness, it was entirely absent. On his admission, he had well marked hectic fever, with copious puriform expectoration, and appeared very much emaciated. The right clavicle sounded pretty clear, but under the left clavicle there was well marked dulness, with a full mucous râle approaching to gargouillement and pectoriloquy. The two latter symptoms became much more decided in about a week after his admission, and I accordingly marked on his card "Phthisis Senilis." The only other circumstances connected with the history of this case which deserves attention, was, that he laboured under constant costiveness, which continued up to the period of his death, his bowels never yielding except when he used purgative medicines.

It is unnecessary for me to enter into a detail of the remedies employed to alleviate his symptoms — the only duty which remains for the physician under such circumstances; I shall, therefore, content myself with noticing the phenomena observed on dissection, with one or two particulars which seem to demand a brief observation. You will recollect that this man exhibited, for several weeks before his death, unequivocal signs of a large cavity in the left lung, and that latterly the right lung also had become dull on percussion, and that the stethoscopic phenomena indicated the formation of a new cavity at its upper portion. Here are the lungs; the left, you perceive, is larger than the right, and exhibits a marked depression at its upper portion, where the phthisical cavity is situated. You perceive, also, that the pleura investing it is very much thickened, and very rough on its surface; this appearance was in consequence of its intimate and universal adhesion to the corresponding pleura costalis, from which it was separated with considerable difficulty. You perceive that the right lung is rather smaller than the left; the left, being rendered more extensively solid by disease, has become incapable of collapsing after death to the same extent. We shall now make a section of the lung, to show the extent of the cavity. Here is the cavity; you perceive that it is nearly large enough to contain a small orange, and that its walls are lined with a firm semi-cartilaginous membrane. At the upper and internal part there is a small opening, which seems to be the commencement of a fistulous passage, a very common occurrence in cases of phthisis

senilis; I shall introduce a probe and lay it open. Here is the track of this fistulous opening, and you perceive it terminates in one of the large ramifications of the left bronchus. You may perceive, also, that the section I have made displays masses of small granular tubercles in the upper and anterior portion of the lung, quite different in size and appearance from the large tubercles seen in the child and adult. I shall now make a section of the right lung. It is much more natural in its feel and appearance than the left, but still in all chronic cases of phthisis we seldom have the disease limited to a single lung. Here you perceive are a few patches of granular tubercles, looking as if they were infiltrated into the substance of the lung, and not surrounded as the large tubercles of the adult and child are, by vascular condensed pulmonary tissue. Here, you see, I have cut into a small cavity; from its contents and appearance, you can judge that it is of comparatively recent formation; it has no semi-cartilaginous lining, and is of very inconsiderable size. You perceive, also, that it communicates freely with a pretty large-sized bronchial tube, and contains a quantity of muco-purulent secretion.

With respect to the state of the viscera of the abdomen, I may observe, that with the exception of some portions of the intestinal tube, which I am about to show you, they presented nothing very remarkable. The liver and kidneys were found to be of the natural size, somewhat indurated, and very friable, and the spleen exhibited several small tubercular spots on its surface. Here are the stomach and duodenum, which you perceive retain their normal appearance; and the same remark is to be made of the colon and rectum. In the cæcum, however, which you see here, and here also in the ilium, there are several ulcerated patches of an oval form, and corresponding to the situation of the glands of Peyer. In some places you perceive the ulcers have destroyed not only the mucous membrane, but also the muscular coat of the intestine, and have very nearly produced perforation.

A most important inference may be drawn from this fact. Here we have several ulcers, destroying the mucous coat of the intestine, and eating their way through its muscular tissue, so that the only barrier left to prevent an effusion of the intestinal contents into the cavity of the peritoneum, is a thin layer of serous membrane. Yet, during the whole time he remained in the hospital, his bowels were so obstinately costive, that we were obliged to give him purgative medicine every second or third day, to procure an evacuation. You would suppose, *à priori*, that a man, in whom ulceration of the bowels existed, would suffer considerably from pain, griping, and tympanitis, and that he would labour under the diarrhœa so frequently observed in the advanced stage of phthisis. Our predecessors entertained a notion that the diarrhœa of phthisis is a species of internal sweating; they observed, that when the patient ceased perspiring from the skin, he was generally attacked with a watery diarrhœa, and hence they termed the diarrhœa colliquative. After-

wards it was found, on numerous examinations, that where this diarrhoea had existed, there was in most cases ulceration of the bowels; hence pathologists began to believe that this ulceration had a great deal to do with the intestinal symptoms observed towards the termination of phthisis, referring to it the abdominal pain and tenderness, the unmanageable character of the diarrhoea, and the aggravation of the hectic symptoms.

Now it strikes me that this mode of accounting for these symptoms was, perhaps, too hastily adopted. No doubt ulceration of the bowels may produce all the symptoms detailed; but, on the other hand, it may exist to a very remarkable extent, and yet produce no symptoms by which it could be recognised. Here was a patient who never had the slightest tendency to diarrhoea, who never complained of pain, griping, flatulence, or abdominal tenderness; on the contrary, his bowels were not merely slow, but even confirmedly costive, and he always felt more or less relief from the use of purgative medicine. None of us ever suspected that anything like ulceration existed; we gave him a full dose of castor oil every second day, which produced one rather scanty evacuation, and yet when we come to examine his intestines, we find numerous patches of ulceration. This case is calculated to make a deep impression on every reflecting mind; in a practical point of view, it is of great importance. If the scrofulous disease had in this case been entirely limited to the bowels, and had not touched the lung, the great probability is, that it would have been almost wholly latent; that the man would have taken no notice of it, would have thought himself well, and eaten, drunk, and worked as usual; that the disease would have gone on stealthily committing its ravages, and that one of the first symptoms of danger would have been the occurrence of perforation, followed by universal and fatal peritonitis. The question would then be as to the cause of death. The pathologist would open the body, and find at once that the cause of the whole mischief was ulceration of the intestines; but he would be mortified to think that the work of destruction had gone on silently and unobserved, and that it could not be recognised until a new disease appeared, under which the patient sank. I have read of more than one case in which a person killed by accident was found to have large ulcerated patches in the ilium, and yet had not been known during life to complain of any intestinal symptoms. In one case, a strong and apparently healthy Lascar, who had eaten heartily an hour before he was killed, and whose digestion was, according to his friends' account, unaffected by any morbid derangement, presented, on examination, a number of deep ulcers in the ilium, which would in all probability have ended in perforation and peritonitis in the course of a few days.\*

\* [In these cases the distinction between follicular and common inflammation of the bowels should not be forgotten. If the membrane be affected, the symptoms of diseased bowel are much more permanent than if the follicles only be inflamed, or even ulcerated. It is true, that acute inflammation is more often

At the conclusion of this lecture I intend to speak of hoarseness and chronic laryngitis, and shall most probably return to this interesting topic again. At present I shall detain you for a few moments with a brief outline of a case of total loss of voice, which I have recently witnessed, and which is in itself so singular that I make no apology for giving it.

Before I mention this case, allow me to observe that loss of speech arises sometimes from lesions of apparently a very trifling character. A person may totally lose his speech without any previously existing or premonitory symptoms indicative of nervous lesion — without having experienced any sensation of pain or vertigo, any noise in the ears, any indications of determination to the head — in fact, without anything to show that the aphonia was connected with any particular state of the brain. Thus, a barrister, whom I attended with Dr. Beatty, was walking up and down the hall of the Four Courts, waiting for a cause to come on, and chatting with one friend and another; as the hall was rather crowded and hot, he went out into the area of the courts for the sake of the air, and had not remained there more than ten minutes when an old friend from the country came up and spoke to him. He was pleased to see his friend, and wished to inquire about his family, when he found, to his great surprise, that he could not utter a single audible sound; he had completely lost his voice. He recovered the use of his tongue in about three weeks, but not completely, for some slowness of speech remained. When the loss of speech was first perceived, his friend brought him home in a carriage; and during the day he had several attacks of vertigo, and afterwards hemiplegia. For several hours, however, before distortion of the face or any of the usual symptoms of paralysis had commenced, the only existing symptom was loss of speech. This gentleman died of apoplexy in about two months.

In many cases of paralysis you will find that, although the patients have lost the power of utterance, yet the motions of the tongue appear to be nowise deranged. In the majority of cases it can be shortened, elongated, raised, depressed, or moved from side to side, with as much apparent facility as in a state of health; and yet the voice is in some instances very much impaired — in others, totally lost. In such cases it would appear that the defect lies in the glottis, which forms and modulates the voice, and not in the tongue or lips, which divide and articulate it. Indeed, this is evident to any one who observes the interrupted and spasmodic efforts which paralytic persons make when speaking; they are, in fact, all stutterers.

But to return to the case to which I have alluded. A young accompanied by symptoms than if it be chronic or sub-acute, especially if it be that very slow variety which depends upon a tuberculous deposit in the follicles, and is often perfectly latent. In old men tuberculous diseases are always slow and scarcely inflammatory; and there are, therefore, very few symptoms of inflammatory reaction. — *Ed.*]

gentleman of delicate constitution, and who is now about sixteen years of age, continued to enjoy tolerably good health up to his sixth year. When about six years of age, he went to bed one night in health and without any unusual symptom, but on getting up in the morning it was observed that he had lost his speech, and was unable to articulate a single word. His family became alarmed, and sent for a physician immediately; the boy got some internal medicine and a stimulant gargle, and recovered his speech in a few days, without the occurrence of any symptom of laryngeal inflammation or cerebral disease. But what was remarkable in the case was this: the boy, who up to this period had spoken well and distinctly, now got a terrible stammer. This resisted all kinds of treatment, and for ten years he continued to stammer in the most distressing way, and was so annoyed by it himself that, when a boy, he used to stamp on the ground with vexation whenever he failed in uttering what he wished to express. In the month of May last he got an attack of chronic laryngitis of a scrofulous character, and evidently the precursor of phthisis. Indeed, he is at present labouring under phthisis; Dr. Stokes and I have examined him, and we feel convinced that tubercular deposition is going on in the lungs. But what is most curious in the case is this: after he got the laryngitis, a very peculiar change took place; the laryngeal inflammation modified the tone of his voice so as to make it a little husky, but *the stammering has completely ceased*.

You are aware that stammering has been explained as depending on spasm of the muscles which are employed in modifying the column of air as it rushes through the narrow aperture of the glottis. At certain times, and under a variety of circumstances, those fine muscular organs become spasmically affected, the vocal chords no longer undergo the same steady and exact tension and relaxation, and speech becomes interrupted in consequence of frequently recurring closure of the glottis. With respect to this disease, I would beg leave to refer you to a very excellent chapter in Dr. Arnott's work on the Elements of Physic, vol. i., p. 644.

In the case to which I have referred, inflammation taking place in the mucous membrane covering these delicate muscular fibres, you can conceive that either the thickening of the mucous membrane, or the alteration in the state of its vitality, may have so modified the disposition of the parts, that they become incapable or indisposed to undergo those rapid contractions necessary to produce stammering, by inducing closure of the glottis at the moment that its aperture ought to remain open. The case itself, however, is an extremely curious one, and I do not believe that there is any similar one on record. Everything which bears on the cure of so important a disease as stammering, even though it be accidental, and not the result of medical care and ingenuity, is of great value, inasmuch as it tends to place the causes of the disease in a clearer light. In this point of view I look upon the case as one of very great interest.

I shall conclude this lecture with a few detached observations on hoarseness, or loss of voice, from sore throat or slight laryngeal inflammation — a form of disease which is now very prevalent.

A form of hoarseness is frequently observed in growing boys or girls, which assumes a very chronic character, and often resist for a long time almost every form of treatment. A boy gets cold, followed by sore throat and feverish symptoms, which may last for a few days, and then disappear under the use of aperient medicines, or perhaps without any interference on the part of the parents or the physician. The feverishness and soreness of throat subside, but the hoarseness remains, and the boy can speak only in whispers. This condition may last for weeks, and even months, without any other symptom whatever; the patient has no cough or difficulty of breathing; his appetite is good, sleep and digestion natural, and there is no appearance of emaciation. The only thing amiss with him is the impairment of voice, and this continues so long that it gives rise to a considerable degree of anxiety on the part of his parents. When you examine the fauces, you find no appearance of inflammation in the mucous membrane, and there is no superficial or deep-seated tenderness in the region of the larynx. How are you to treat this form of disease? It depends on a relaxed and weakened state of the chordæ vocales, and perhaps the muscles of the larynx — the result of inflammation of an exceedingly chronic character — and will not be benefited by leeches, or antiphlogistics, or low diet. The best thing you can do in such a case is to have recourse to the use of strong stimulant gargles. You begin with a dram of the tincture of capsicum in six ounces of decoction of bark, which is to be used five or six times a day. After some time you can increase the quantity of tincture of capsicum, but you never need go farther than half an ounce in a six ounce mixture. In the next place, you will have recourse to frictions over the region of the larynx and external fauces with croton oil, which is much better adapted for such cases than tartar emetic ointment. The eruption produced by tartar emetic ointment is productive of a great deal of annoyance, and when the pustules break they prevent the boy from wearing his neckcloth. All the purposes of a counter-irritant are quite as well fulfilled by croton oil, and with much less inconvenience. The best form of using it is the following:—

R Liniment: camphoræ comp. ʒj.  
Olei crotonis tiglii, m̄ xx.

Of this mixture a small quantity — say a couple of drams — should be poured into a saucer, and rubbed over the fore part of the neck night and morning, until a full crop of pimples appears. When those have dried up and desquamated, it should be again applied, and in this way a mild and manageable, but very effectual, degree of counter-irritation can be kept up for any length of time. In addition to these measures (should the disease continue), I would

strongly recommend small doses of iodine, and change of air. I have been induced to give iodine in such cases from observing that inflammation of a chronic character seems to have many points of resemblance to that which arises from scrofula.\* The last thing which I have to observe on this form of hoarseness is, that you should, particularly in the beginning, insist on the observance of strict silence — a point which is said to be exceedingly hard to be attained where the patient happens to be a female. In some cases all these means fail, and then something more energetic must be attempted. The inhalation of the vapour arising from tincture of iodine and tincture of conium, added to hot water in a proper apparatus, has proved useful to some; but in all obstinate cases the sheet-anchor is mercury exhibited internally, and by means of inhaling the fumes of hydrargyrum cum cretâ. In general, it is necessary to continue the mercurials until the mouth is slightly touched, when the hoarseness will be found to yield. It is obvious that, before we employ mercury in a case of chronic hoarseness, we must feel well assured that we have not to deal with a hoarseness arising from a phthisical tendency, for in this case mercury would prove injurious to the constitution. In such cases the stethoscope and percussion often afford valuable assistance, by showing that although the patient has had a hoarseness and cough for weeks, or even months, yet there are no symptoms of tubercular development in the lungs. The cough is only the result of laryngeal inflammation or irritation; the submaxillary glands and the amygdalæ are often slightly enlarged, the fauces are red, and the back of the pharynx is covered with irregular superficial excoriations. Connected with the subject of sore throat is the discovery, lately announced by Velpeau, of the use of alum in powder in acute cynanche tonsillaris. He states that this powder, applied by means of the finger to the fauces and inflamed parts, exercises a wonderful effect. The symptoms, says Velpeau, are stopped as if by enchantment, the fever diminishes, the redness and tumefaction of the inflamed parts subside, the appetite returns, and convalescence is speedily established. This application is successful at any period before suppuration has been established. Alum has long since been applied in substance to the throat, in cases of angina maligna, and in chronic sore throat; but, before Velpeau, no practitioner ever dreamed of making use of alum as a local application during the first stages of acute cynanche tonsillaris. By the way, this use of alum is calculated to throw some light on the good effects which this substance exerts, when taken in large doses, in cases of violent pain in the stomach arising from indigestion, recommended by Dr. Griffin, of Limerick.

\* [The external use of iodine by painting the exterior of the throat with the tincture, or rubbing it with iodine ointment, should, in such cases, be added to its internal administration. — *Ed.*]

## LECTURE XIV.

THERE is at present in the hospital, a man whose case has been marked imperfect or (to use a better phrase) incomplete amaurosis. He has been complaining at different times during the past year, and for the last six months his vision has been very weak, with the exception of occasional intermissions. He can perceive objects tolerably well with the right eye, but scarcely at all with the left; and in both vision is more or less dim and imperfect.

On examining this man's eyes, you cannot discover in either of them the slightest imperceptible defect as an optical instrument. The deficiency of vision, therefore, does not depend on opacity of the cornea, on disease of the lens or its capsule, or on any affection of the aqueous or vitreous humours; it is simply an impairment of the vitality of the organ, connected with functional disease of the retina. Having thus satisfied ourselves as to the seat and nature of the disease, we come next to inquire into its cause and origin. From a careful examination of the man's state of health, we can have no doubt on our minds as to whether the amaurosis in this case has been produced by derangement of the stomach or not. You are all aware that the celebrated Richter has long since shown, that functional disease of the retina is often connected with a deranged state of the alimentary canal, and that it may be treated successfully with emetics and purgatives. Here, however, we have no evidence of the existence of congestion or derangement of the stomach and bowels. The man's appetite is good, his bowels regular, and his health robust. But when we come to examine the head, we find evidence of cerebral congestion sufficient to account for the functional lesion of the optic nerve. Our patient has been a long time complaining, at different periods, of a sense of fulness in the head, and is subject to attacks of vertigo while walking, causing him to stumble occasionally, and labour under frequent apprehensions of falling down in the street. He prefers walking along the middle of the street to either side, and says that he is always worse when he attempts to walk along the flagway. This is an ordinary symptom observed among persons who have a tendency to vertigo; they are frequently made worse by the operation of causes in themselves apparently inconsequential, and the nature of which we cannot well understand. You are aware that, in many persons, the act of looking for any length of time at objects moving rapidly in a straight line, and still more in a circle, has a tendency to produce giddiness. Thus, looking out of the window of a steam-carriage on the objects apparently moving backwards with great velocity, or looking over a bridge at the current of a rapid river, or gazing at a person whirled round in a gyrating swing, is very apt to give rise to vertigo. Again, persons labouring under a morbid sensibility of the brain, very often become

giddy from looking at a succession of objects moving with much less rapidity. Hence you will find such persons made giddy by walking through a crowded city, and having a number of persons pass by them on the flagway, and they seek for an opportunity of getting into the middle of the street, to avoid meeting so many objects. I knew a person who could never pass by a line of railing with any degree of comfort; if he happened to look at them as he moved by, he became almost immediately vertiginous. Giddiness is also generally produced by looking down from a great height, in a vertical direction, or by looking upwards, provided the object be immediately overhead, and at a great distance. Under these circumstances, most persons experience a feeling of vertigo, no matter what their position may be at the time. There seems to be little doubt that the sensation of giddiness does not depend merely on the distance or position of the object looked at. It would appear that, in general, some continuous communication must exist between that object and the spectator. Thus we feel giddy when we look down from a precipice at something below, or when standing beneath the dome of St. Peter's or St. Paul's we regard with attention the vaulted structure above; but we do not feel giddy when we look down from a balloon, or look upwards at the moon or stars near the zenith. It has not been sufficiently remarked by writers, that persons subject to vertigo are often almost as much affected by looking upwards as by looking downwards. Persons who are inclined to vertigo, will also become giddy by directing the eye with a fixed attention for any length of time to the one object,—such as continuing to look in a straight line, or endeavouring to direct the course of their movements along a plank or narrow pathway. These circumstances are all very difficult to explain, and I bring them forward merely as illustrating the fact of this man's preference for walking in the middle of the street.

In this man, as you may have perceived, we had several circumstances calculated to direct our attention to the state of the brain as connected with the impairment of vision; besides vertigo, and a tendency to stumble in walking, he had flashes of light before his eyes, and other luminous hallucinations, with tinnitus aurium on one side. With respect to the flashes of light before the eyes, I may observe, that they may be produced by the operation of various causes; a blow or pressure on the eye will cause them; they may arise also from a particular state of the arteries which supply the optic nerve, and thus at each pulsation of the heart a flash of light is seen. This morbid sensibility of the retina, which, under such circumstances, appears to be itself the source of light, is very often a symptom which ushers in the extinction of the visual power. It is a very general remark, that hypersensibility of an organ is but too often the prelude to total loss of its functions. Thus we frequently have a morbidly sensitive state of the eye before it becomes incurably amaurotic, a morbid sensibility of the ear ushering in loss of hearing, and unnatural excitement of the sense

of touch preceding paralysis. But in this case we have not only an irritable condition of the retina, but also an affection of the pupil; the iris is sluggish in its motions, and this symptom occurring at this particular period, combined with the vertigo, luminous hallucinations, and gradual but steady progress of the disease, give us some reasons to apprehend that it will end in complete amaurosis. Seeing, however, that the symptoms have originated in a congested state of the brain, it is our duty, as far as possible, to check its progress. This is to be done by cupping over the nape of the neck, leeching the temples and behind the ears, and acting on the bowels by brisk purgatives. With the same view, I intend to insert a seton in the nape of his neck, and to administer the nitrate of silver internally, combined with a small quantity of aloes, a remedy which is possessed of some valuable properties in the treatment of chronic congestion of the brain, whether tending to produce amaurosis or headache.

With respect to the causes of amaurosis, I may observe, that they depend either on disease of the brain, as congestion, inflammation, the presence of tumours of various kinds, or on injuries of the retina itself, or of the supra and infra-orbital branches of the fifth nerve, or on affections of the alimentary canal. All these matters, however, have been so well detailed, particularly in the excellent article on amaurosis, by Dr. Jacob, in the Cyclopædia of Practical Medicine, to which I refer you, that I shall pass over them at present, and close my notice of this case with a few desultory remarks. I believe I mentioned in a former lecture, that I had seen a very curious case of amaurosis, in which the cause of the disease seemed to be connected with an impression made by cold on the facial branches on the fifth nerve. I have already taught the class, that paralysis of any part of the body may arise from an impression made not only on its own nerves, but also on the peripheral extremities of the nerves of another and even a distant part. I have also remarked that the fifth nerve is connected with the nerves of all the senses, but in particular with the optic, and hence we can explain why injuries of its supra and infra-orbital branches may bring on amaurosis. In the case to which I refer, the patient was exposed, while travelling outside on a stage-coach, to a keen north-easterly wind, and when he arrived in Dublin, his lips were very much chapped, and the skin of his face bore evident marks of the cold, and drying powers of the wind. Soon afterwards, he began to complain of dimness of vision, and a thin gauze veil seemed to be extended between him and every object he looked at. After five or six days when he applied to me, I found a considerable degree of amaurosis present, and at the distance of a few feet he was unable to recognise the countenance of a friend. He had no headache, vertigo, or tinnitus aurium; in fact, nothing to indicate cerebral congestion, and his appetite was good, sleep undisturbed, bowels regular. He had never thought himself, nor did a medical gentleman, to whom he had applied, ever suspect, that the impres-

sion of cold on the face had produced the amaurosis, and he said that he had been advised to get himself leeched and cupped over the back of the neck. On examining into the cause of his disease, and having found that he had been exposed to severe cold, it occurred to me that the amaurosis might be connected with the impression made by cold on the superficial branches of the fifth nerve, and, on more accurate investigation, I found that there were some grounds for this opinion. I was further confirmed in this view of the subject by the details of a case communicated to me by my friend, Dr. Montgomery, in which the patient evidently got paralysis of the portio dura from exposure of one side of the face to cold. Of course this paralysis was attended with distortion of countenance, in consequence of many of the muscles of the face depending on the portio dura for their supply of nervous energy. But what was particularly remarkable in this case, was, that vision on the affected side of the face became dim and indistinct. Now, can this be explained? Yes, very easily. You all know that the branches of the portio dura have an extensive communication with the supra and infra-orbital branches of the fifth. Now, the paralysis which commenced in the portio dura, gradually extended to the branches of the fifth, and through them to the optic nerve, with which the fifth is intimately connected, and hence it was the retina became finally deranged in its function, and dimness was produced.

There is one circumstance more to which, as I am on the subject of amaurosis, I shall briefly call your attention. You will recollect the case of a boy whom we have had very recently under treatment for amaurosis, and may perhaps remember that one of the remarkable points in his case was this: — when he looked straightforward he did not see anything in the direction to which his eyes were turned, but he could see the objects that were considerably below, or to either side of, the axis of vision. There are two or three circumstances under which a person cannot see an object by looking directly at it, and I wish to state these circumstances. In the first place, it may happen that an opaque spot may be situated on the centre of the cornea and directly in the axis of vision, as we sometimes see in cases of scrofulous ulceration, followed by permanent opacity of the cornea. Now, in this case, it is plain that the person cannot see objects placed directly before him and in the axis of vision. The second case is one where the patient cannot see objects directly before him, but can distinguish them tolerably well at a certain angle of obliquity, the cornea being perfectly clear and uninjured in its texture. Now, this may arise from an opacity of the lens, limited to its centre, and not generally diffused through its substance. The lens is a compound body, the structure of which was, until very lately, but little known. When the lens or its capsule is affected with opacity, this opacity is not always equally diffused, but sometimes occupies the central portions of these

organs, while the circumferential portions retain their transparency. Hence, when a person under such circumstances wishes to see an object, it is necessary that the rays of light should fall obliquely in order to reach the retina. A third case is, where, although the cornea and crystalline lens are in the natural state, still the patient sees objects a little removed from the axis of vision much better than those which are in it, as in the case to which I have just alluded, where the patient could scarcely distinguish any object placed directly before him, but sees tolerably well objects at either side of, or below, the direct line. The reason of this appears to be, that when a person so circumstanced looks directly at an object, the picture of the object falls on a part of the retina not obedient to the stimulus of light. In the process of ordinary vision the parts around the axis, and corresponding to the field of vision, have the picture of the object looked at painted on them, and vividly and strongly illuminated. The central portion of the retina bears on it the picture of the object which the mind attends to, for it is surprising how indistinct and how little attended to any object seen obliquely is. Now, where disease has rendered this central portion of the retina insensible to light, then the attention is immediately turned, with a greater degree of intensity, to the sensations derived from the surrounding portions, and the patient is enabled, so long as this portion retains its sensibility, to enjoy the sight of objects placed obliquely and not in the axis of vision. Even in healthy eyes the non-central portions of the retina may be rendered available in particular cases. This has been proved by Brewster, Herschel, and others. In looking, for instance, at a star of the smallest magnitude, it vanishes from the sight and is lost when looked at directly, but, if you turn a little from it, it will still catch the eye and be visible, because the image of the star will now fall on a part of the retina which is generally in darkness, and which is more sensible from being unaccustomed to the glare of light. Hence in many cases of amaurosis it is not unusual to find that the patient retains the power of vision so far as regards objects placed at an oblique angle with the axis of the eye after direct vision has been all but extinguished. This is all I have to say at present with respect to amaurosis.

As there is no other case presenting peculiarities to which I might call your attention, I shall beg leave to occupy your time for the remaining part of our lecture hour with a detail of the circumstances under which I have been led to employ the acetate of lead in Asiatic cholera, and to communicate briefly the mode of its administration and the results which attended its use. You are aware that during this epidemic, which commenced its fearful career in Dublin in the spring of 1832, the modes of treatment principally relied on were, bleeding in violent spasmodic cases, emetics of ipecacuanha and mustard, the application of heat externally, and internally stimulants, but, above all, calomel, not in small but in large and frequently repeated doses, either alone or combined with

opium. I need not tell you that the mercurial treatment came to us sanctioned by high authority: it was a remedy to which the experience of Indian practitioners had given a high character, but in our hands, I must say, it proved of very little value. Be this as it may, I must say that I had reason to be dissatisfied with this mode of treatment; I had tried it myself, and had seen it tried in every way which ingenuity or experience could suggest, but I had seen it fail in almost every instance.

About the middle of last summer the epidemic began to spread fearfully among those who had hitherto been exempt from its attacks; many persons in respectable life were seized, and my private practice afforded numerous opportunities of becoming practically acquainted with the disease. In several cases to which I was called in, the malady had not advanced to the stage of collapse, the symptoms of cholera, properly so called, had merely commenced, the intensity of the disease was still far away, and a fair chance was afforded for the operation of therapeutic agents. In most instances I tried calomel and all the ordinary remedies with profitless results; my treatment proved too often ineffectual; and some persons, whose lives I highly valued, perished in spite of all my efforts, leaving me grieved for their loss, and mortified by my own want of success. I found that I could no longer place any confidence in calomel, and determined, in my own mind, to give up a remedy which had so signally failed; it was, however, a question of deep anxiety to me what I should select instead, or to what article in the *Materia Medica* I should have recourse, where so many had proved utterly valueless.

About this period I happened to be called on to attend a case of obstinate diarrhoea with my friend Dr. Hunt. The case was an extremely harassing one, and had resisted all the ordinary remedies. I advised the use of acetate of lead and opium in full doses; this was given, and I had the satisfaction of finding that the diarrhoea soon yielded. Before this period I had received a letter from that able practitioner and excellent man, Dr. Bardsley, of Manchester, directing my attention to the use of acetate of lead in large doses in that form of diarrhoea which occurs towards the termination of long fevers, that is to say, the diarrhoea which precedes and accompanies inflammation of the glands of the small intestines. I had subsequently, at Sir P. Dun's Hospital, several opportunities of witnessing the truth of Dr. Bardsley's remarks. I saw that, in many cases during the course of fever, where the patient was low and prostrated, symptoms of intestinal congestion came on, followed by diarrhoea, which many persons thought would end in ulceration of the glands of Peyer; and I found that in such cases the acetate of lead was the only remedy that could be relied on. I observed, too, that, contrary to the prevailing opinion on the subject, it could be given in large doses with perfect safety. You are aware that Dr. Bardsley has shown that it may be given to children in very considerable doses without any bad effects, and that in adults he has

pushed this remedy to the extent of twenty or thirty grains in the day, without any unfavourable consequences.\*

With these impressions I came to the resolution of trying the acetate of lead in the next case of cholera which offered a chance of deriving benefit from any kind of treatment. It is known that there are some cases in which the disease at once assumes so frightful a malignity, that the patient is lost from the very moment of his seizure. This hopeless and intractable malignity is not peculiar to cholera; it is seen in fever, scarlatina, croup, measles, and hydrocephalus; in fact, there are certain forms of all diseases in which the best directed efforts of medical skill not only fail in curing the disease, but even in retarding its progress. But there are cases of cholera where the patient is not struck down at once, where the disease is not developed at once in all its awful intensity, and where time, brief though the space may be, is allowed for the play of therapeutic agencies. It is in such cases the acetate of lead may be given with some prospect of success, and it is by such cases alone, and not by those which are necessarily fatal *ab initio*, that its value is to be tested.

Before we proceed further, I may observe, that the principle on which the calomel treatment was employed in cholera arose from almost constantly observing that there was a total deficiency of bile in the stools. Soon after the supervention of an attack, the alvine discharges were observed to be white and without the slightest tinge of bile; and on this very remarkable symptom practitioners dwell almost exclusively, thinking that the patient's only chance lay in restoring the secretion of the liver. Now it is obvious that the absence of bile in the stools is no more a cause of the disease than is the deficiency of urea in the kidneys or of serum in the blood. Viewing the disease in this light, it would be just as reasonable to give a diuretic to restore the secretion of the kidneys, as to give calomel to produce a flow of bile. The liver ceases to secrete, not only in consequence of the injury done to its vitality by the proximate cause of cholera, whatever that may be, but also from a mechanical cause, namely, from a diminution in its supply of blood. It may appear strange that when the same given number of vessels go to the liver and come from it at all times, that the quantity of blood circulating in it should be greater at one time than another. I have not time at present to enter fully into this subject; but it is a fact admitting of sufficient proof, that the quantity of blood circulating in any organ is very much modified by the state of its capillaries. The quantity of blood also which goes to a gland varies according to the peculiar state of that gland, being greater during its period of active secretion than when it is at rest. But in a case of cholera, where the capillary vessels of the intestinal canal from the stomach and the rectum are actively engaged

\* [In a case of severe dysentery with large hemorrhage from the bowels, Dr. Horner of this city and myself gave it in doses of two grains every hour; that is, forty-eight grains in twenty-four hours, without the slightest bad effects. — *Ed.*]

in taking up the serum from the whole mass of blood, and pouring it into the cavity of the digestive tube, there is an enormous drainage from the system, and there must be, consequently, a deficiency of blood somewhere. Now it would appear that a quantity of blood, sufficient for the purposes of secretion, is abstracted, not only from the biliary, but also from the urinary system; and hence it appears just as reasonable to give diuretics to restore the urinary secretion, as to give calomel to excite the secretion of the liver. It would be, *à priori*, as original a mode of treatment, and be equally as successful. I have, therefore, no hesitation in saying, that the calomel treatment has no claim to merit on the ground of theory, and, as far as I have observed of it in this country, it seems to be of no practical value in the treatment of cholera.

With regard to the quantity of acetate of lead which may be given in this disease, and the mode of administering it, a few words are necessary. I have already stated that, when I first tried it, I prescribed it in large doses, fortified by the authority of Dr. Bardsley, and by my own experience, of its utility in many cases of diarrhoea. It appears that, before I recommended the acetate of lead, it had been used at the Cholera Hospital in Grangegorman lane. Of this I was not aware, until a book was subsequently published by Dr. Cranfield, which I afterwards reviewed in the *Dublin Medical and Chemical Journal*, and I feel that on that occasion I did fair and impartial justice to its merits. I certainly did not know that the acetate of lead had been given at the Grangegorman Hospital; for, in the very able report of cholera, as observed at that institution, published by one of its officers, Mr. M'Coy, the treatment relied upon appears to have been the mercurial, and not a word was said of acetate of lead. It had certainly been used there by one physician; but it was given in smaller doses, insufficient to produce decided effects, and no stress had been laid on its value as a remedy in cholera by the practitioners attached to the hospital. Be this as it may, acetate of lead was not known to the medical men of Dublin; and to the practising apothecaries, before I recommended it. It had been frequently employed in the form of injection by them, but no one had given it in large doses by the mouth, or introduced it to the particular notice of the profession. I believe I can fairly claim the merit, such as it is, of being the first to give it in large and effectual doses. The mode in which I prescribed, was this: — A scruple of the acetate of lead, combined with a grain of opium, was divided into twelve pills, and of these one was given every half hour, until the rice water discharges from the stomach and rectum began to diminish. In all cases where medicine promised any chance of relief, this remedy was attended with the very best effects. It gradually checked the serous discharges from the bowels, and stopped the vomiting. I need not say of what importance this is; as long as these exhausting discharges continue, as long as the serum of the entire body continues to be drained off by the intestinal exhalants, what hope can we entertain? What

benefit can be expected from calomel and stimulants, when every function of the digestive mucous membrane seems to be totally extinguished, except that of exhalation, and while profuse discharges, occurring every five or ten minutes, are reducing the patient to a state of alarming prostration? Knowing the inevitable fatality of all cases where these discharges went on unchecked, I was happy in having discovered a remedy which seemed to possess more power in arresting them than any yet devised, and this impression was confirmed by the results of subsequent experience. That the acetate of lead will succeed where all other astringents fail, was proved by the case of Mr. Parr, of this hospital. Having got an attack of threatening diarrhoea, at a time when cholera was prevailing in Dublin, this gentleman used various kinds of astringents, and took so large a quantity of opiates that he became quite narcotised, but without any relief to his symptoms. When I saw him he was as bad as ever, and was beginning to exhibit appearances of collapse. I advised the use of pills, composed of acetate of lead and opium, in the proportions already mentioned, and had the satisfaction of finding that before night the diarrhoea had ceased. The pills are to be used one every half hour while the diarrhoea remains unchecked, but as it begins to diminish, the intervals between each pill may be prolonged, and in this way the patient may be gradually prepared for leaving off the remedy altogether. I have frequently given in this way as much as forty grains of acetate of lead in twenty-four hours, with great advantage to the patient, and without any bad consequences ensuing.\*

It is unnecessary for me to say any more on this subject; if I chose to mention names, I could bring forward the names of many medical men in Dublin whose lives, I am happy to state, were saved by the use of this remedy. I may, however, observe, that this mode of treatment has now become universal here, and that it has almost completely superseded the use of calomel and opium. I will confess that this fact is a source of high gratification to me, and I point also with pleasure to the fact, that since it became extensively known (as it did during the last invasion of the epidemic), the profession has gained more credit than before, and the number of cures has been proportionally greater.

I have referred to this subject also for another reason. I feel it a duty which I owe myself, to defend myself against a series of attacks which were made on me, and to vindicate my claims, not to having been the first to administer acetate of lead, for it had been given previously by Dupuytren, and at the Grangegorman Cholera Hospital, but to having been the first to prescribe it in large and sufficient doses, to render it an available and useful remedy, and to introduce it to the general notice of the profession. The credit to which I lay claim, rests solely on these grounds. I

\* [It has long been the practice with American physicians to give the acetate of lead in large doses. — *Ed.*]

have been attacked on more than one occasion in the public papers, and gentlemen subscribing themselves *Honestas*, *Candidus*, and *Verax*, (*per antiphrasin*, I suppose, for they have shown neither honesty, candour, nor truth,) have attempted to rob me of the merit of what they sneeringly called the lead treatment. I am not in the habit of noticing attacks in the daily or weekly papers, but I have thought it necessary to say so much in the way of explanation, lest any of my friends or pupils should misinterpret my silence.

The following case of remarkable mobility of the sternum was observed by Dr. Stokes and myself. A medical student, nineteen years of age, and of a sanguineous temperament, who had often been attacked by violent pectoral inflammation, particularly a few years ago, but who had since become comparatively healthy and robust, applied to me for advice concerning a pain in his chest. This happened after lecture in Sir P. Dun's hospital, in the presence of several of the students and Dr. Law, who saw with astonishment this young man open his shirt, and with his hand push the sternum deep inwards towards the spine, so as to convert the anterior part of the chest into an extensive and by no means shallow cavity, at the bottom of which was the sternum. The rapidity with which this was effected, and the unnatural appearance the chest then presented, excited a most disagreeable feeling of alarm in the minds of the spectators, for we could not avoid dreading that he was inflicting on himself some serious injury.

The portion of the chest which yielded in this singular manner to pressure, comprised the sternum from within two inches of its superior edge, and seemed below this point to be limited laterally by the lines answering to the junctions of the cartilaginous with the osseous portions of the ribs, so that the whole space capable of being pressed inwards was nearly triangular in shape, and was very extensive. The sternum was so tender to the touch, that, in applying the pressure, he was obliged to press at some distance at each side of this bone. When the pressure was carried to the farthest point, the sternum was pushed in, as nearly as we could guess, about two inches, and the action of the heart, as well as that of the subjacent lung, appeared to be notably diminished, and, in consequence of this the pulse was weakened. This young man was subject not only to constant pain in the sternum, but likewise to frequently recurring violent palpitations of the heart. His chest was sufficiently ample and well formed, but he had lately become round shouldered, in consequence of his seeking relief from pain by stooping forward. No other portion of his osseous system exhibited the least trace of softening. The only affection which I can call to mind the least resembling this, is the softening which sometimes affects the female pelvis, giving rise to great distortion, and which softening is accompanied, during the months or even years of its formation, by severe pelvic pains.

## LECTURE XV.

Case of phlebitis — Remarks on the symptoms and treatment of this disease — Pathology of phlegmasia dolens — Its treatment — Case of cancrum oris — Fatal termination — Remedies employed — Case of ague cake — Observations on the different varieties of ague — True ague, or intermittent fever — Ague produced by inflammation of internal organs — Nervous ague — Hysterical ague — Treatment of ague cake.

AMONG the cases at present under treatment in our wards, that of Mary M'Quade particularly demands your attention. This poor woman was admitted a few days since labouring under an attack of fever, accompanied by considerable prostration, anxiety, and restlessness; in addition to these symptoms, she has a local affection of a very important nature; the right leg, as far as the knee, is swelled to twice its natural size, and a large erysipelatous blotch occupies the fore part of the foot, extending over the ankles on each side. The thigh also is increased in size as far as its upper third, so that the tumefaction embraces more than two-thirds of the whole extremity. There is a considerable degree of tension present, and the limb, particularly along the internal surface of the leg, is extremely tender, the soreness being so great over the course of the veins and lymphatics, that she could not bear the slightest touch.

Here we had a swelling of the lower extremity depending on an inflammatory condition of the part, and the question is, in what tissue did it commence, and what are its characteristic features? Before we discuss this question, it may be proper to observe here that the disease had its origin from cold. When a patient is exposed to cold under unfavourable circumstances, local inflammation is generally the consequence, and it depends on a variety of causes of what description the inflammation will be, and on what particular part it will fall. Where the lower extremities are the parts chiefly exposed, inflammation of the cellular membrane of the leg is apt to ensue, or it may attack the veins, as in the case before us, constituting phlebitis, or the lymphatics may be primarily and almost exclusively engaged. In a few cases inflammation attacks the arteries of the limb, as in a case which has been published by Dr. Stokes and myself in the Dublin Hospital Reports, where a person, after exposure of the lower extremities to cold, got an attack of arteritis, terminating in mortification of the limb and death. Exposure of the lower extremities to cold gives rise to phlebitis much oftener than to arteritis. Dr. Stokes and I have published a striking case where inflammation of the veins of the leg was produced by this cause. You will find this case referred to by Dr. Lee, in the excellent article, *Phlegmasia Dolens*, in the Cyclopædia of Practical Medicine. You perceive, then, that painful swelling of the lower extremities originating in cold, may consist either in the whole cellular membrane being engaged, or it may arise from in-

flammation of the lymphatics of the veins, or of the arteries. Now when inflammation attacks in the first instance the subcutaneous tissue of the lower extremities, it frequently in its progress involves the lymphatic and venous tissues, the arterial very seldom, for the arteries lie deep, and have no connection with the subcutaneous cellular membrane. There is, however, nothing more common than that inflammation commencing in this way should terminate in phlebitis, and disease of the lymphatics. This appears to be the nature of phlegmasia dolens, that peculiar inflammation which generally attacks one, and seldom both, of the lower extremities, which is most commonly observed in females, and which is characterised by swelling not pitting on pressure, by excessive cutaneous tenderness, and by a remarkable whiteness of the skin of the affected limb, accompanied by increased heat, and more or less lesion of the locomotive function. These are the principal symptoms which characterise phlegmasia dolens. The inflammatory condition of the limb causes an exudation of fluid into the cellular membrane, consisting partly of serum and partly of lymph; this produces swelling which is of a firm and rather unyielding character, not pitting on pressure like that which results from anasarca. After some time the inflammation extends to the neighbouring tissues, and attacks the veins and lymphatics, a circumstance which has led many persons, among others Dr. Lee, to believe that phlegmasia dolens arises primarily from phlebitis. This, however, is not borne out by the fact, nor is it true that it consists in inflammation of the lymphatics, as others have suggested; it may engage both the lymphatic and venous tissues, but it differs in many points from pure phlebitis, or true inflammation of the lymphatics.

In the case before us, it would appear that the inflammation commenced primarily in the veins, and by a careful examination you will be able to discover some essential points of difference between the disease and phlegmasia dolens. There is a good deal of soreness present in this case, but the exquisite neuralgic tenderness of phlegmasia dolens is wanting. Again, the shining appearance of phlegmasia dolens is absent, and the colour differs greatly from the dead whiteness observed in that disease. The tenderness also is here more localised, being chiefly complained of on the inside of the limb, and along the course of the veins and lymphatics. On the other hand, it may be observed that these affections have many symptoms in common, and you may have remarked that here, as in phlegmasia dolens, the locomotive power of the limb is considerably diminished. This, however, has been remedied, to a certain extent, by the curative means employed, and the patient is now able to raise up the whole limb, and bend the leg on the thigh. Now, whence arises this loss of power so often witnessed in cases of phlegmasia dolens, and phlebitis, and inflammation of the subcutaneous cellular tissue of the lower extremities? I am inclined to think it depends on a morbid impression made on the ultimate ramifications of the sentient nerves, which is pro-

gated along the larger trunk to the spinal cord, and from thence by a reflex course is brought to bear and react on the muscular nerves of the limb. In my remarks on paraplegia, I have spoken of this matter at large, and given several instances of loss of power in a limb, produced by impressions made on the extremities of its cutaneous nerves; and such appears to be the lesion of the locomotive power observed so frequently in cases of phlebitis and phlegmasia dolens. In many cases of paralysis, we find the first stage of the disease attended with an increased sensibility of the nerves of the part affected, tending to show that the primary source of the disease consists in an impression made on the sentient extremities of the nerves; and there is nothing more common in such cases than to find the loss of the motor power accompanied by deranged sensation. In phlegmasia dolens and phlebitis we have great cutaneous tenderness, and this is very rapidly followed by more or less diminution of the muscular power of the limb.

I shall now refer briefly to the curative means employed in this case, observing that it has this in common with many cases of phlegmasia dolens, viz., the inflammation has engaged in succession the cellular membrane, veins, and lymphatics. When the lymphatics are attacked with inflammation, they become swelled, and have a knotty cord-like feel, and this condition is most commonly attended with the appearance of erysipelatous patches on various parts of the limb, over the place where a number of lymphatics are simultaneously engaged. This appears to be the case in the present instance, and it explains the occurrence of the erysipelatous blush which covers the instep and ankle. I need not tell you that the appearance of erysipelas over any part of a limb so circumstanced, strongly demands our attention, as it might be an indication of the seat of an injury which may have given rise to the disease. In this case, however, it was the product of the disease, and had no connection with its origin. The treatment of a case of this description cannot be conducted on strict antiphlogistic principles. The fever which accompanies venous inflammation is of a low typhoidal character, and prostration sets in at a very early period. The intimate connection of the venous system with the whole economy, the peculiar character of the inflammation affecting venous tissue, and the rapid prostration of strength which ensues, are all circumstances which contra-indicate general depletion. On the other hand, the best effects have been obtained by active local bleeding, and this appears to be so much the more necessary in cases of phlebitis, as the inflammation is apt to run very quickly into the suppurative stage. I therefore ordered forty leeches to be applied along the inside of the affected limb, directing the nurse to encourage the bleeding by warm fomentations. In addition to this, two ounces of mercurial ointment, combined with two drams of the extract of belladonna, were spread on large pieces of lint, and applied over the limb after the leech-bites had ceased to bleed. That mercurial ointment thus applied has a tendency to subdue inflammation of a

low erysipelatory character, has been shown by Mr. McDowell in an excellent paper published in a late number of the Dublin Medical and Chemical Journal. To this we added the extract of belladonna, because the local inflammation was attended with hypersensibility of the limb, a condition over which belladonna is known to possess a remarkable influence. Dr. Lee, I should observe, does not appear aware of the great utility of narcotics in the painful swelling of the extremities after fever, or in true phlegmasia dolens. In both these diseases, together with active local depletion by means of the frequent application of leeches, we should employ anodyne ointments, and, above all, large doses of opium internally. Some patients in phlegmasia dolens, if the bowels be regulated, will bear and derive benefit from four, five, or even six grains of opium in the day; I speak of the second stage of the disease. The same observation applies with regard to wine, and to sulphate of quinine. It is obvious that phlegmasia dolens consists of something besides mere inflammation; the pain is altogether different from that attending ordinary phlegmasia; it more resembles a general neuralgia of the extremities of the subcutaneous nerves. The internal treatment consisted in giving a few grains of hydrarg. cum creta three times a day, to keep up a free state of the bowels, and with the view of gently affecting the system. These means are very likely to be attended with success. The woman at present is much better, and the inflammation is sensibly declining. I shall not, however, anticipate the result, and for the present shall only call your attention to the case.

You may perhaps ask me to account for the great tumefaction of the limb observed in this case. It has been supposed by some persons that the whole swelling depends on the obstruction of the veins; but if inflammation was entirely limited to the veins, the swelling could not be so extensive. It is true that if you produce artificial obstruction of any of the great veins, by placing a ligature on it, you cause, for the time, very considerable œdema of the limb. The obstruction to the passage of blood through an inflamed vein will necessarily give rise to a certain degree of swelling, but I am inclined to think that this is not the only source of the tumefaction; it would appear that in addition to phlebitis we have the inflammatory process communicated to the neighbouring parts; the cellular tissue and probably the lymphatics become engaged, there is a copious effusion of serum and lymph, and to this the general increase in size of the limb is to be chiefly attributed.

With respect to the termination of phlebitis, I may remark that it generally ends in adhesion of the sides of the vein and obliteration of its cavity, so that when the patient recovers, the affected vein feels like a piece of whipcord lying under the skin. We had some patients here who had obliteration of this kind, and in one of them who died afterwards of fever, I found some of the smaller subcutaneous veins had become totally impervious through their whole extent, and resembled hard cords. This is all I have at pre-

sent to say with respect to phlebitis, observing that the diseases which are most analogous to it are phlegmasia dolens, and a particular morbid enlargement of the lower extremity, which has been described by Dr. Tweedie, and by Dr. Stokes and myself in the Meath Hospital Reports.

A child about four or five years old, who has been for some time in the fever ward, has been recently attacked with a very formidable disease, cancrum oris. Like most patients labouring under this malady, she had been previously debilitated by the occurrence of fever, for a child in good health seldom, indeed, I may say never, gets an attack of this kind. A preceding febrile condition of the system, and a depraved habit of body, must have existed in every case where cancrum oris occurs. The disease itself is nothing more than mere local inflammation setting in under unfavourable circumstances, and during a morbid state of the system, and hence the local inflammation rapidly assumes the gangrenous character. In children, many forms of general disease\* are apt to bring on a state of the system in which inflammation of any part has a strong tendency to run into gangrene, and this is to be borne in mind with reference to the present case, for cancrum oris has nothing peculiar in it except its situation.

It is not my intention at present to enter into any particular description of this disease, it has been well described by many surgical writers, and you will find a very valuable essay on the subject published by Dr. Cuming in the fifth volume of the Dublin Hospital Reports. There is also a very excellent article on cancrum oris in the London Cyclopaedia of Practical Medicine, to which I beg leave to refer you. It may, however, be necessary to allude briefly to some points connected with its treatment. In the first place, I may observe, with reference to the general principles of treatment, that you should not be misled by the name of the disease, or think that because there is a gangrenous condition present, you should rely exclusively on detergent and antiseptic remedies. This is a common but pernicious error — it is the error of prescribing for names and not diseases, the easy but dangerous practice of unreflecting empiricism, by which the reputation of medicine has been so often damaged. He who commences the treatment of cancrum oris with the internal and external use of antiseptics, is acting on false principles; his practice may have the sanction of time, but it has not the support of observation and experience. In the early stage of the disease, when the cheek is of a deep red colour, tense, prominent, and shining, I do not know of any means which tend so directly to diminish the amount of inflammation, and check the progress of gangrene, as the application of leeches, few in number, but frequently repeated. This is the mode of treatment which I have found to be most effectual, and which, from my experience of the disease, I can recommend as the most likely to prove beneficial,

\* [Especially measles. — *Ed.*]

when, unfortunately, the ordinary resources of medicine are too often ineffectual.

With respect to internal remedies, Dr. Cuming lays great stress on the utility and value of purgative medicines. They may be certainly necessary, and as the little patients very often swallow the sanguous discharge from the ulcer, more or less derangement of the intestinal canal must accompany the disease. But along with purgatives I would strongly recommend the use of sulphate of quinine, either in the form of enema, or if the child can be got to swallow it, made up into a syrup, and its solution favoured by the addition of a little sulphuric acid. With regard to the external applications, you have a choice of many remedies, each of which you will find recommended by authors, but none of which can be exclusively relied on in any case. The balsam of Peru with castor oil forms a good application, or you may blend it with honey, as we did in this case — one ounce of the balsam to two ounces of honey. You may also employ washes composed of solutions of nitric or muriatic acids, or of the chlorides of soda or lime.

In the present instance the sore has, in spite of all our efforts, eat its way from the internal to the external surface of the cheek. On Saturday, the centre of the cheek was characterized by the appearance of a blueish-black spot, indicating the occurrence of sphacelus. In the meantime it was curious to observe how little constitutional disturbance was yet produced; the child, notwithstanding the manifest existence of extensive sphacelation of the cheek, continued for several days to have a tolerable appetite, and to sleep well, being nearly free from fever, and complaining but little; as the mortification progressed, destroying rapidly the external parts of the cheek, &c., matters soon altered, and the poor little patient sunk exhausted and suffering.

Let us now direct your attention to the case of a sailor who has recently been discharged. This boy was one of the crew of a vessel which returned lately from the West Indies, and was exposed to great hardship during his voyage. Boys in his situation suffer an enormous quantity of fatigue and rough treatment; they are the drudges of all on board, and it is impossible to conceive what privations they endure. When the vessels arrive in unhealthy climates, they are generally the first who fall victims to the prevailing malady, and such was the case of this lad, who got yellow fever immediately after his arrival at the West Indies. From this he recovered, but on his way home was attacked with irregular intermittent which lasted for a considerable time. He had no treatment, and the disease subsided spontaneously, leaving him extremely weak and emaciated. He was, however, obliged to work as usual on his passage, and he arrived in Dublin about three weeks since, debilitated, thin, and with a countenance expressive of long-continued suffering. He had on his admission that peculiar hue of skin which often follows tedious intermittents, and which those who have once seen will always recognise with facility. This

colour is to be distinguished from the hue of slight jaundice — it is what has been termed a clay colour. In the present instance it was mixed with a faint tinge of jaundice, and on examining the stools we found that they contained scarcely any bile. He had no fever; his pulse was rather slow and regular; he complained of lassitude; his urine was deeply tinged with bile; and his belly tumefied. On examining him, we found that the abdominal tumefaction did not depend on the presence of fluid in the peritoneum; it was produced by enlargement of the liver and spleen, intestinal congestion, and tympanitis.

Here was a case of what has been vulgarly termed ague cake; that species of congestion and enlargement of the liver and spleen which is apt to accompany the paroxysms of an intermittent, and in some cases to remain after the disease has subsided. You are aware that some persons, during the paroxysms of an intermittent, will complain of pain in the right hypochondrium, but more frequently in the left, and on examination the liver or spleen is found increased in size. If you take the trouble of reading the experiments which have been made with the view of illustrating the functions of the liver and spleen, you will have a good idea of the facility with which enlargement of these organs, but particularly of the latter, may take place. The spleen undergoes very remarkable changes, even in its natural state, during the process of digestion, and there is a great difference between its size when an animal is fasting, and its size when an animal has taken food. Indeed, it is surprising how rapidly it will become filled with blood, and how quick the transition is from a state of collapse to a state of congestion. It is easy, therefore, to conceive how the spleen may, during the paroxysms of an intermittent, particularly in the cold or congestive stage, become manifestly enlarged. The increase of size, however, never occurs to such an extent in the liver; unlike the spleen, its magnitude remains nearly the same, and its volume does not vary like that of the spleen with the time of day or the period of digestion. It is obvious, therefore, *a priori*, that the spleen should be more frequently the seat of congestion than the liver, and that its enlargement should be more distinct and palpable. But it is not in the liver or spleen alone that congestion occurs during an aguish paroxysm, it may take place in any organ; and this, in a practical point of view, is worthy of being borne in mind. Thus, in a case which I attended, the patient got intermittent of a tertian type; during each paroxysm he had some distress about the chest and slight cough, but these symptoms disappeared during the intervals. As the disease, however, went on, the fits of coughing and dyspnoea increased, and the sulphate of quinine failed in arresting the paroxysms. The pulmonary congestion became gradually more marked and permanent, and no longer disappeared during the intervals; finally, inflammation of the lung took place, and the patient died with extensive hepatisation. This happened about twelve years ago, when the old notion of connecting the cold

stage of ague with debility was universally prevalent, and before the practice of bleeding for the relief of visceral engorgement had been introduced. Subsequently, the practice of bleeding in the cold stage, as introduced by Dr. M'Intosh, was tried on an extensive scale in the Meath Hospital, and it is a practice which I can strongly recommend in those cases where there is recurring inflammation of some internal organ. It is not a mode of treatment applicable to all cases, and in mild cases unaccompanied by excessive congestion of any viscous, it is totally unnecessary; but where an important organ is threatened, it is a valuable remedy, and has on some occasions cut short the paroxysms altogether, or rendered them much milder and more manageable.

Sometimes ague is accompanied by symptoms of congestion and inflammation of some internal organ during the paroxysms; and yet, by giving sulphate of quinine, you will succeed in arresting the intermittent and the visceral disease at the same time. I recollect the case of a boy who was under treatment here for ague, and who, during the paroxysms, had severe bronchitis with dyspnoea. The cough did not leave him even during the intervals, but it was much milder; I was, however, doubtful whether the case would admit of the exhibition of sulphate of quinine, from the violence of the pulmonary symptoms during the fits. I determined, after some time, to try the quinine, and I found that it stopped both the intermittent and the bronchitis. It is to be observed, however, that in this case the bronchitis was of a chronic character; and I believe that in all cases of ague accompanied by visceral derangement, where quinine succeeds in curing the disease, the inflammation is either of a trifling description, or is one of a chronic nature. Where the visceral derangement is great, quinine will not succeed, and hence it is of great importance, in the treatment of ague, that you should carefully attend to the state of the internal organs.\*

There are several forms of disease which simulate intermittent in a very remarkable manner; and, as this may lead to very dangerous errors, it is necessary on all occasions to make a strict inquiry into the origin and history of the complaint. Some forms of hectic assume the intermittent character, and have been frequently mistaken for ordinary ague. Of this I had lately a very striking instance in the case of a lady, who came from the country of Limerick to consult me for what was stated to be an attack of irregular intermittent. She had been confined in August; had been feverish after her accouchement—the consequence, she believed, of exposure to cold—and got a slight cough. This continued, but without any expectoration, for two or three weeks, and then she was attacked with fever of an intermittent character, and exhibiting a well-marked tertian type. She began to take quinine, but this aggravated the cough very much without having any effect on the

\* [Iodine used internally and externally is often a good adjunct to quinine.  
—*Ed.*]

paroxysms. Various other remedies were also tried, but their only effect was to render the paroxysms more frequent and irregular. The moment I saw her I was convinced that she was labouring under some visceral disease. I examined her chest, and found dulness under the right clavicle with tubercular crepitus. Her cough had been dry until she came to Dublin, but now it became suddenly moist, and a distinct gargouillement could be heard. The apparent intermittent was nothing more than phthisical hectic; and Dr. Stokes, who was also called in, came to the same conclusion. I recollect having observed something of the same kind in a case which I attended some time ago with Dr. Marsh. The patient had well-marked intermittent, and we treated him for it; but the sulphate of quinine, and the other remedies which we employed, had only the effect of converting the fever into remittent. On a sudden, the gentleman, without having made any complaint of pain in the side, or anything indicative of derangement of the liver, became suddenly jaundiced, and sank rapidly. On dissection, we found seventeen or eighteen small circumscribed abscesses in the substance of the liver. The intermittent hectic here depended on interstitial inflammation of the liver—a disease which is generally of a latent and incurable character.

I need not refer here to certain forms of fever which accompany disease of the brain and of the urinary system, and which are remarkable for their intermittent character. There is, however, one form of anomalous intermittent, of which it may be necessary to say something: I allude to that species of ague which seems to be exclusively confined to females of a nervous habit—at least I have never met with it in any others. Persons of this description, after an accouchement or some acute disease, or in consequence of violent mental emotions, will sometimes get into a peculiar state of health, in which they are liable to recurring periodic attacks of fever. Some time since, Dr. Stokes called me to see a lady who, shortly after her confinement, had got an attack of well-marked tertian. She had, at the regular time, severe rigors, followed by acceleration of pulse, heat of skin, and profuse sweating. When the paroxysm was over, she felt tolerably well, but still there was much excitement of pulse, and the intermissions were anything but perfect. Sulphate of quinine had been tried by the accoucheur in attendance, but had failed. On examining the case, I found that the lady was of a decidedly nervous and hysterical habit, and advised the use of nervous and antispasmodic medicines. A mixture containing musk, camphor, and ammoniated tincture of valerian, was prescribed, and the intermittent symptoms rapidly disappeared.

But to return to the case of this boy. How are we to treat this ague cake? The disease has not as yet proceeded so far as to produce ascites, but if permitted to run on it would soon cause effusion into the peritoneal cavity. In a case of this kind a great deal will depend on whether there is any fever present or not. If

there is no remarkable excitement of pulse or heat of skin, general antiphlogistic means will be unnecessary, for any local tenderness or irritation can be relieved by local bleeding. In the case before us, there was a slight degree of tenderness, and we applied leeches once with benefit; but we did not apply them over the abdomen — they were applied to the anus, because it is well known that leeches applied in this situation have a remarkably good effect in removing intestinal congestion, and consequently in relieving hepatic engorgement. Those who have remarked the relief which a flow of blood from piles gives in cases of hepatic engorgement with dyspepsia, will recognise the value of depletion of this kind, and will imitate the natural mode of relief by art. Hence the use of leeches applied to the anus in cases of intestinal congestion and hepatic or splenic engorgement. There is no necessity here for applying a great number of leeches — three or four every second day will be quite sufficient, and we have found this number answer every necessary purpose. In addition to local bleeding and attention to diet, I ordered this lad to take a few grains of blue pill once a day, not with the intention of affecting his system, but merely with the view of keeping up the free action of the bowels. I continued the mercury only as long as the tenderness of the liver remained; for experience has shown, that in those cases of ague cake where there is merely enlargement of the liver without tenderness, mercury is a bad remedy.

In cases of this kind, where the stage of active congestion is past — where there is no fever — where the tenderness is removed, and nothing but the increased size of the liver remains — how are you to accomplish a cure? — first, by inserting one or two setons over the liver: and, secondly, by the use of iodine and tonics. The use of setons in cases of this description is well known, and needs no comment. I recollect the case of a lady, who, after several attacks of jaundice, got chronic enlargement of the liver. The right lobe of the liver, which was the portion chiefly affected, extended down towards the crest of the ilium, and was excessively indurated. This state had occurred after the patient had used mercury and been copiously salivated. Two setons were inserted over the region of the liver, and these produced rapid diminution of the enlargement, and a perfect cure.

With respect to tonics, I may observe that they prove extremely useful in chronic enlargements of the liver and spleen. We are in the habit of using, in this hospital, a combination somewhat similar to the celebrated Bengal spleen powder; it consists of vegetable and mineral tonics, combined with a vegetable purgative — as, for instance, aloes — and we have seen the best results from its use. With respect to iodine, it is a valuable adjuvant in such cases, particularly where the system has been much deranged, and where mercury would be likely to run down the patient. Here iodine gives vigour to the constitution, and tends in a very remarkable manner to promote the absorption of the morbid products, on which the enlargement chiefly depends.

## LECTURE XVI.

It is my intention in this day's lecture to refer briefly to some cases worthy of your attention; I shall not dwell long on them, as I wish merely to point them out that you may observe them more accurately.

In the first place, there is a man, named Vero, in the fever ward, whose case I beg you will study with attention. He applied for admission here some time ago, labouring under violent and general bronchitis, accompanied with high inflammatory fever; we took him in at the time, as his case was one of the most urgent danger, but were obliged, by the crowded state of the hospital, to put him into the large fever ward. It is unnecessary for me to detail the treatment employed, as you have all witnessed it. By the most energetic measures, we succeeded in arresting the disease, but his convalescence was rendered tedious in consequence of his having been suddenly affected by a small quantity of mercury. His mouth became very sore, his breath fetid, his gums spongy, the inside of his lips covered with lymph, and his system exhibited all the marks of mercurial irritation; but, under the care of Mr. Grady, a gradual but decided improvement in his condition was going on, and he was advancing rapidly in convalescence, when, unlucky for himself, he was persuaded to leave the hospital for the sake of voting at the city of Dublin election. In doing this, he was necessarily much fatigued, and was exposed to cold on returning from the heated booth. Now, mark the consequences of this indiscretion. This man, just arrived at the period of convalescence from a severe and dangerous inflammatory fever, and greatly debilitated both by the disease and the venesects and other remedies necessarily employed, improvidently exposes himself while his frame was still emaciated and weak, and while his mouth was still sore in consequence of severe mercurial salivation; in this condition he exposes himself to the operation of mental excitement, great bodily fatigue, and cold — and what have been the consequences? Why, that a new attack of fever immediately struck him to the ground with a heavy hand; and, after an absence of ten days, he returned to the hospital on the 24th of January, complaining of rigors, and other symptoms indicative of commencing fever. We saw him next morning, that is, before this new fever had lasted twenty-four hours, and we found him affected in a most remarkable manner; we found him labouring under a number of severe symptoms, which would have led the most experienced, if asked to guess how long his fever had already lasted, into the commission of a gross error, for he would answer that it must be at least the eleventh day. It is, indeed, very rare to find fever at once commencing with symptoms such as we observed on the first day in Vero. Great prostration of strength, hot skin, dry tongue, pulse 108, nervous

agitation, restlessness, together with *subsultus tendinum*, were present from the commencement. The *subsultus* was very remarkable, and increased to such a degree, even on the second day, that Mr. Grady found it very difficult to count the pulse at the wrist; and yet, though his muscular system was thus irregularly excited, and its nervous influence deranged, he had not even a tendency to delirium, and he slept soundly; neither had he the least headache.

I called your attention to this circumstance at the bedside of this patient, and I endeavoured to impress strongly on your minds how forcibly this case opposes the doctrines of those who attribute all the nervous disturbance of every part of the system, and, among the rest, *subsultus*, to congestion or to inflammation of the brain. When the *subsultus* had attained a degree of violence in Vero's case, such as we seldom witness, we remarked, nevertheless, that he slept well, had a clear eye, without the least approach to suffusion, and that he was free from headache, heat of scalp, or throbbing of the temporal arteries. Neither were we able to detect the slightest indication of inflammation, or even of congestion, in the chest or abdomen. The breathing was indeed quickened, but only in proportion to the acceleration of the pulse, and there was no cough or thoracic pain or uneasiness. The belly was fallen, soft, and quite free from tenderness; and there were no griping pains, flatulence, nausea, or diarrhoea, and yet the patient was evidently very dangerously ill. Agitated with *subsultus*, he was in a constant state of restlessness when awake; his skin was hot, his tongue dry, and his weakness was sudden and excessive; in short, he was labouring under intense *nervous fever*. This is a rare form of disease, and one the very existence of which most modern pathologists have been in the habit of denying; but, as I told you in a former lecture, I have seen several examples of it.

I may remark that, in the present epidemic fever, the termination of the disease by a well-marked crisis never occurs. Now, in the epidemic fever of which I have spoken in a former lecture, and which committed such devastations in 1837, a crisis was observable in the majority of the cases, and was almost always preceded by rigors and a hot fit, attended for a few hours with marked exacerbation of the symptoms, and followed by a most profuse, warm, general perspiration, bringing perfect relief, and often so excessive that the steam of it could be seen issuing forth in vapour through the blankets in which the patient lay wrapped. In the beginning of the epidemic, the critical rigor often took place on the fifth day, and oftener on the seventh, but, as the disease continued, these short fevers, which, by the by, always left the patient very liable to relapse, entirely disappeared; and when the epidemic reached its acme, the crisis rarely took place so early as on the eleventh day, and most general on the fourteenth or seventeenth day.

You perceive, that in judging of the truth of the doctrines held

by the ancients, concerning the existence of critical days in fevers, an observer of the present epidemic might be led into error, and might, by generalising too hastily, arrive at the false conclusion, that this doctrine of critical days is totally destitute of foundation. But to return to our patient Vero. It is not very difficult to explain why, in him, the moment fever was excited it assumed the nervous type. He had been debilitated by severe inflammatory fever and by active antiphlogistic treatment, and, above all, his nervous system had been severely tried by an unexpected mercurial salivation, brought on by an unusually small quantity of calomel.

You are aware that various nervous symptoms attended with irregular muscular action, and simulating chorea, or paralysis agitans, are frequently the result of metallic salts, whether lead or mercury. For this reason, I look upon the previous mercurialisation as the chief cause of the nervous type of Vero's fever. In spite of all our efforts, he died exhausted on the tenth day.

Let me now refer you briefly to the case of Catherine M'Donnel. This girl is labouring under an attack of chorea of considerable standing, and is at present about fourteen years of age. I mention this because it is not improbable that the appearance of the catamenia, which frequently come on about this period, may have some influence on the future progress of her complaint. She states that her disease commenced about seven years ago, and that ever since she has been subject to its attacks at various times. Her health is somewhat impaired, but not, however, to such a degree as to prevent her from following her usual avocations. Her present attack commenced about three weeks ago.

It is unnecessary for me to enter into any description of the convulsive motions of the limbs, and other symptoms which characterise chorea; neither is it my intention to enter into the general history of the disease; you will find an admirable account of its symptoms, pathology, and treatment, in Copland's Dictionary. I shall merely remark, with reference to this case, that there is no headache, and an accurate examination has failed in detecting any symptoms of determination to the head. Neither have we derangement of muscular motion during sleep; the girl's sleep is tranquil and regular. There is no evidence of gastric derangement present. She relishes her food, and, what is rather singular, her appetite is better during the attacks than during the intervals. Her tongue is clean and moist, but her bowels are inclined to constipation. It is of importance to bear in mind here, that her symptoms do not appear to have any connection with cerebral or gastric derangement. She has no headache, flushing of the face, noise in the ears, or throbbing of the temporal arteries, and there is nothing but constipation to show that the digestive organs are out of order. I dwell on these two circumstances particularly, because some persons have attributed chorea to cerebral irritation, and others to indigestion and gastric derangement exclusively. I am quite ready to

grant that it may be produced occasionally by either of these two causes, and that the presence of either will tend to aggravate it, but am inclined to look on chorea as chiefly a nervous disease, and to be cured chiefly by nervous medicines. Dr. Copland's remarks upon this question are excellent, and deserve to be attentively studied. For my own part, I think that in this, as in many chronic diseases where indigestion exists, it is often a consequence, not a cause, and is produced by debility of the vital powers of the stomach and intestines, organs which are affected by causes acting on the whole organization. Thus a too rapid growth, premature or unnatural sexual indulgence, confinement, want of exercise, of rest, care and anxiety, &c., may each occasion a weak state of every organ of the body, including debility of the stomach. In a girl of this age, who labours under constipation, it is always proper to commence with the use of purgatives, and I have accordingly ordered her some pills, composed of aloes and capsicum; but I would not persevere in the purgative plan any longer than was necessary for removing constipation. What I mainly depend on for removing the disease is tonics, one of the best of which is the carbonate of iron, in doses of half a dram four times a day. There is at present a controversy between Dr. Billing and Dr. Johnston, with respect to the doses of carbonate of iron to be employed in this disease; and it is asserted, that in cases where doses of half a dram, three or four times a day, will not succeed, a cure may be effected by giving three, four, or even five drams, frequently in the day. With regard to this subject, I must confess that I am for moderate doses, and I think, in general, as much good may be accomplished by half a dram or a dram, three or four times a day, as by much larger doses. I have accordingly ordered this girl to take half a dram four times a day, and will persevere in the use of the remedy until we have given it a fair trial. The carbonate of iron tends, in general, rather to produce a relaxed than a constipated state of the bowels, and consequently is peculiarly well adapted to chronic cases of debility. The *mistura ferri aromatica*, in moderate doses, is another excellent formula. When we have to deal with constitutional weakness, which has arisen gradually, and continued long, we must trust more to the operation of general physical influences than to medicine, and in graduating the doses of tonics, we must remember that it is impossible in such cases suddenly to strengthen; we must, therefore, rely upon the gradual operation of tonics, given for a long continuance, and in moderate doses. This rule should never be lost sight of in the treatment of chronic diseases; important as it is, most practitioners seem little influenced by it, or perhaps they are altogether ignorant of it, otherwise we should not see them using concentrated and powerful tonics in such large and repeated doses in chorea. Another general rule as to the use of tonics in chronic diseases—usually you will be more successful with mild and diluted than with powerful and concentrated medicines. Thus,

for example, cinchona in powder is often preferable to sulphate of quinine in chronic diseases.\*

There is a very curious case of *paralysis agitans* at present in the female chronic ward, which claims a few remarks. You must have all remarked the patient Ellen Davis, a young woman about twenty-five years of age. She has a most peculiar expression of countenance, and, as her disease is rather a rare one, I beg that any gentleman who has not seen it will take the opportunity of paying her a visit. According to the account which she gives of herself, the disease appears to have originated in a sudden and violent mental emotion. The poor girl, like most of the lower class of country people, happened to be a firm believer in the existence of ghosts and such like nonentities, and this superstition has formed the source or exciting cause of the disease in question. She was, unfortunately for herself, located in a very uncomfortable situation, her house being close to a road between two churchyards, a complete thoroughfare for ghosts, and where figures of a very questionable description had been frequently seen by many of her neighbours. Some of her acquaintances, who were aware of the frightful notions she entertained about personages of this kind, resolved to amuse themselves at her expense, and played off a practical joke of a very cruel nature. A churn-dash was procured, to which a sheet was appended, so as to form no unapt representation of a sheeted headless corpse, and this was dangled between two trees by means of a rope. The poor girl, who happened to be going to bed at the time, was utterly appalled by the sight of what she conceived to be one of these ghosts sweeping through the air, and immediately dropped down in a state of total insensibility. The fright deranged her nervous functions in an extraordinary degree, she became vertiginous, lost the use of her limbs on one side, and took to bed, from which she states she did not get up for three months.

The history of this case is of course extremely uncertain. In chronic cases, and among patients in her class of life, you can seldom expect to get an accurate or satisfactory account. It is quite clear that she had hemiplegia, but whether it arose from the fright or not we cannot exactly say. The symptoms of hemiplegia after some time began to decline, and she gradually regained the power of walking. This, however, is but feeble, and though it is now seven years since the occurrence of the attack, the muscular power of the limbs is very slight. She had also during the progress of her complaint an attack of amaurosis, which she says deprived her entirely of sight for nearly a year, and that after this period she recovered the use of one eye completely, but the other still remains amaurotic, and she can distinguish objects with it very imperfectly. At present she affords a very remarkable specimen of paralysis

\* [The black snake-root is an excellent remedy in chorea (*actea*, or *cimicifuga racemosa*). Sulphur baths, or cold baths, either with fresh or, still better, salt water, are also very useful. — *Ed.*]

agitans. She cannot walk slowly, and when she has commenced walking she cannot stop without considerable difficulty. The muscles of the extremities, face, and tongue are very little under her control, and are in a state of almost perpetual motion. The muscles of the eyelids and eyeballs are also similarly affected, and this gives to her countenance a strange and peculiar expression. You will find an excellent description of this disease in Dr. Elliotson's lectures; a very interesting case is also detailed in Dr. Wm. Stokes's lectures, published in Renshaw's London Medical and Surgical Journal.

It would appear that in this disease the muscles are not by any means beyond the control of the will, but they are so influenced by the operation of some other unknown cause, that their motions are more or less imperfect and inadequate. She can walk quickly with tolerable ease, for in walking quickly the muscles are contracted more rapidly, and the will more strongly exercised, so that the obstacles to regular motion are in a great measure overcome, but when she walks slowly, time is given for the cause, which produces the anomalous motions to come into play, a spasmodic state is established, and the muscles cease to obey the will so implicitly. I knew a gentleman who had a very curious form of this paralysis agitans. When about to walk, he was obliged to have himself balanced, and set off by some other person, just like a piece of machinery. When once set agoing, and on a smooth road, he went on very well for a considerable time, but if interrupted by a hill, or by the unevenness of the ground, he was compelled to run backwards in a right line until stopped by some one, and so little control of his motions had he at this time, that if a pond or precipice lay behind him he could not prevent himself from tumbling over it. I have occasionally seen him under such circumstances, and the appearance he makes is singular and ludicrous. He goes backwards until he meets with a wall or some other object which resists his further progress. This is a very curious circumstance as connected with the nature of the disease.

I do not intend at present to enter into any inquiry respecting the nature and treatment of paralysis agitans. The prognosis of the disease appears to be, *a priori*, unfavourable, from the total want of any exciting cause which might be discovered and removed. If the disease consisted in congestion of the head or spine, or if there was any apparent lesion by the removal of which we could hope to effect some good, we might entertain a more favourable opinion with respect to its termination, but it unfortunately happens that in too many cases we can do nothing more than observe the curious phenomena which it presents.

Let me now direct your attention to the case of a man named Murphy in the chronic ward, who came in with bronchitis accompanied by anasarca. He had old bronchitic cough, copious expectoration, and orthopnoea; but he had no symptom of disease of the heart; his pulse was regular and rather slow, he had also albu-

minous and scanty urine, but without any fever, thirst, or nausea. The recent origin and sudden appearance of the disease induced me to look upon it as a case of acute dropsy, and I commenced the treatment by antiphlogistic measures, which, as you may have perceived, have been followed by remarkable benefit. What I wish to call your attention to particularly in this case, is the state of the patient's urine. On his admission, we found that his urine was highly albuminous; when submitted to the action of heat at the temperature of  $170^{\circ}$  it coagulated rapidly, and showed distinct traces of the presence of a large quantity of albumen. Yet under the use of opium in moderate doses this man's urine became in two or three days perfectly free from every trace of albumen, and has continued so ever since.

Now this case alone would be a sufficient refutation of the opinions of those who look upon albuminous urine as a pathognomonic sign of disease of the kidneys, as described by Dr. Bright, and who are in the habit of marking such cases in the hospital as cases of "Bright's Kidney." It appears rather strange, as in our case, that a man should have "Bright's Kidney" to-day, and not have it the next day. We have had a great many instances of this kind, and in various cases which came under our treatment in this hospital, I have shown that this state of the urine may depend on mere functional disease of the kidney. Indeed, nothing is more common than to meet albuminous urine in the dropsy which succeeds scarlatina, and yet most of the patients perfectly recover. I had lately an opportunity of examining the kidneys of a boy named William Young, who was admitted into Sir Patrick Dun's Hospital on the sixth day from the commencement of anasarca after scarlatina. This boy's urine had a specific gravity as high as 1027, and contained an enormous proportion of albumen. He died suddenly of convulsions the fourth day after his admission. His kidneys were in every respect healthy.

One word with respect to the diuretic remedies, which in this case I have employed with remarkable success. Having removed the acute symptoms by antiphlogistic treatment, I prescribed the following decoction:—

R Decocti hordei,  $\frac{1}{2}$ lb.  
Sacchari albi,  $\frac{3}{2}$ j.  
Nitratis potassæ, 3ij.  
Acidi nitrici diluti, 3j.  
Spiritûs aëtheris nitrosi,  $\frac{3}{2}$ j.

Two tablespoonfuls to be taken every second hour.

This is an excellent mixture, and well suited to the stage intermediate between the acute and chronic form of dropsy, where you wish to excite the action of the kidneys, and are afraid of stimulating the system generally. It has acted very favourably in the case before us, having increased the urinary discharge very considerably without producing any constitutional excitement.

There is a man at present in hospital labouring under diabetes;

he furnishes one of the best examples of the disease you can meet, and I would recommend you to study his case with attention. He has got the notion that his complaint is one of no ordinary interest, and he comes occasionally to remain awhile in hospital and exhibit himself to the class. It is unnecessary for me to enter into any general description of this affection; you will find a very satisfactory account of it in the Cyclopædia of Practical Medicine, and a shorter but equally valuable one in Dr. Copland's Dictionary. The most remarkable features of the disease are those connected with the change in the quality and quantity of the urine. With respect to the former, it is called *mellitus* when it contains a large proportion of sugar, and *insipidus* when it wants the saccharine taste, and presents nothing beyond a mere watery flavour. With regard to quantity, the change is very remarkable; the man who is at present in hospital passes eighteen pints in the course of twenty-four hours. In the normal state a man passes about two or three pints; this therefore must be considered as an enormous increase.

When you come to examine diabetic urine chemically, you find its specific gravity increased. Natural urine ranges from 1017 to 1020, diabetic from 1020 to 1050. Now in every pint of urine of the specific gravity of 1030, there is contained nearly an ounce and a half of solid animal matter. If you took a pint of this man's urine, and exposed it to a temperature of  $170^{\circ}$  on an evaporating dish until all the watery parts were dissipated, there would remain at least an ounce and a quarter of solid animal matter. Now if you multiply this by eighteen, it will give you more than a pound and a quarter of solid animal matter, which this man loses in the course of twenty-four hours by means of the kidneys alone. I need not tell you that this is a very considerable loss, and hence it is that the man naturally calls for large quantities of food to replace it. And such is the nature of diabetes in general; patients labouring under it have the activity of the digestive organs increased in proportion to the drain from their system: and were it not for this they would be rapidly run down by the emaciating effects of the disease. We notice this extraordinary activity of the digestive system in other diseases which have a tendency to produce emaciation; thus a patient recovering from long fever will frequently take and digest with facility quantities of food which produce repletion in a state of health.

In the case before us, one of the most remarkable things is the length of time the disease has lasted. The man has been now ill for more than three years; it is nearly twelve months since he was here before, and at that time he was just as bad as he is at present. He was relieved then, and went out of his own accord, and continued since nearly in the same state we found him at his last admission. He states that he has been ever since passing from twelve to twenty pints of urine in the day. He is, however, able to go about as usual, eats, drinks, and sleeps well, and, with the exception of the kidneys, all his functions appear to be natural; indeed, he

appears to be exceedingly active and vigilant ; he exercises a system of surveillance over the patients, nurses, and wardmaids, exposes all their sins of omission and commission, and might be now and then a very useful kind of person in an hospital.

With respect to the state of his skin, I may observe that it is by no means so dry, acrid, and harsh as we frequently find in diabetic patients ; indeed, it feels nearly natural, and is partially covered with moisture at various times of the day. Some persons, looking almost exclusively to the condition of the skin, have taken a very limited view of this disease. They consider it as arising from the perspiration being repressed and turned inwards on the kidneys. This, however, is by no means satisfactory. Some of the worst cases I have ever seen were accompanied by colliquative sweats. A gentleman came from the country last June to consult me for some affection of the digestive system ; on inquiring into his case I found that he was in the habit of passing very large quantities of urine. I took some of it to my friend, Dr. Apjohn, to analyse, and it was found to be of the specific gravity of 1049. Now this gentleman had been subject to profuse perspirations, and used at that very time to sweat copiously every day. In the case above stairs, the patient's breast and neck are frequently bedewed with perspiration. With respect to the opinions entertained concerning the nature of this disease, I beg leave to refer you to Dr. Copland's Dictionary ; for my own part I can form no idea of it, except that it is a functional derangement of the secreting powers of the kidneys. I look upon all those hypotheses which have sought to account for diabetes by referring it to derangement of the digestive organs as useless and unsatisfactory ; nor do I see why, in cases of disease we are to look for all the matters secreted by the kidneys in the blood. It is true that there are but few of the matters secreted by any glands in a state of health which may not be discovered in the blood. All or most of the proximate principles of the matters secreted by the salivary glands, liver, and kidneys, are to be found in the blood during a state of health, but in disease the case is quite different. Diseased vessels or parts may assume the function of combining animal principles in proportions and modes that form results differing in their nature from anything usually to be found in the system. I confess I can see no difficulty in supposing that a substance so simple as sugar is, may be formed from the elements of the blood, or that the vessels of the kidneys may, in a state of disease, take on a new action and secrete this substance with great rapidity. Sugar is one of those substances which are easily formed by nature, its elements are few and simple, and it may be formed with ease by beings belonging to the animal and vegetable kingdoms. From how many individuals of the vegetable class do we not procure it with facility ? How often do we meet it as an animal secretion ? Indeed, I have strong suspicions that a great many persons in society, who labour under what is merely considered in the light of indigestion, are affected with diabetes.

This was the case of the gentleman whose urine was of the remarkably high specific gravity of 1049. He still continues to pass a larger quantity of water than natural, but not near so much as formerly; its quality, however, has not improved so much as its quantity, and it still contains sugar. The state of health he enjoys is, with the aid of proper regimen and precautions, far from bad, and he is enabled to discharge effectively the numerous duties attached to the agency of an extensive estate in the county of Carlow. Dr. Marsh, who has paid much attention to this subject, attests the prevalence of chronic diabetes in a mild form. It is to be feared that many cases escape detection, because the quantity of water voided by the patient being but little increased, the idea of diabetes does not suggest itself to the mind of the physician. With regard to the quality of the urine, I may here remark, that diabetes may be divided into two sorts: the first includes those cases in which the quantity of urine is increased, but its specific gravity is less than natural; this comprises hysterical and nervous varieties of increased flow of water: the second, and to which indeed the term diabetes ought properly to be restricted, embraces those cases where the urine contains an animal principle either not naturally found in it or found in increased quantity. To this belong diabetes with sugar, with albumen, and with urea, viz.—diabetes mellitus, diabetes albuminosus, diabetes ureosus. The latter is by far less common than the other varieties. I have not myself met with an example, but it has been described by Dr. Bostock and others. The albuminous diabetes is often associated with dropsy, which latter attracts the chief attention of the physician. In some cases, however, the dropsical swellings are either very slight or altogether absent, while the urine is much increased in quantity, and highly loaded with albumen. A remark with respect to dropsy was suggested to me this morning by one of the cases in our chronic ward, and, lest I should pass it over hereafter, it may be as well to introduce it here. Dropsical effusion is in every instance produced by diseased action in the vascular system, and is the result of a morbidly affected secretion on the part of the extreme vessels. Now, like every other product of secretion, the effused fluid is liable to undergo great and sudden variations as to its quantity, variations produced by corresponding changes in the vascular or in the nervous system, which latter is so intimately associated with the function of secretion. This circumstance it is which occasions the swollen parts in ana-sarca to vary so continually in chronic cases of this disease, one part appearing more oedematous and again subsiding on the morrow. Now dropsical patients are morbidly attentive to everything that passes, and are constantly dwelling on all the particulars which relate to their swellings. In hearing their report of themselves, you must not, therefore, allow yourselves to be misled, and you must never attribute any great importance to these local changes, which are too often merely temporary. But what I want to fix your attention on at the present is the fact, that the dropsical effu-

sions to which internal organs are liable are subject to similar unaccountable changes, whether of increase or diminution, and that from day to day in some cases. Thus an anasarca patient will complain of having spent a wretched night, on account of cough and difficulty of breathing. You find his face, neck, and the integuments of the chest very œdematos; and, on examining his chest, great dulness is found in one lung, with moist crepitus; great œdema of that lung in fact exists. In a day or two after, and without any assignable reason, you find that the external œdema has much diminished, and that your patient, free from dyspnœa, has slept comfortably. You examine the chest, and you find a corresponding subsidence of the pulmonary infiltration. The same capricious increase or diminution is observed also in other secretions, as, for instance, in that of the bile.

I have lately examined with much attention the figured large and solid fecal evacuations of a jaundiced gentleman, and observed more than once that one portion of the fecal cylinder was quite brown and thoroughly impregnated with bile, while the remainder was perfectly destitute of it, and therefore was clay coloured.

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## LECTURE XVII.

THERE is a patient, named Catherine Corbally, in the Chronic Ward, to whom I would direct your attention; she is not seriously ill, but there are two circumstances connected with her case worthy of notice. She was an attendant in a family residing in town, the mistress of which, a young and healthy lady, was attacked with symptoms of fever about three days after child-birth, and died. Her fever was irregular in its progress, and attended with rapid pulse, laboured respiration, early sinking of the powers of life, and an eruption which was supposed to be miliary. Shortly before her death I was called in to see her; on examination, we found that the disease was malignant scarlatina; the case was completely hopeless, and indeed I believe that almost every female who got scarlatina after childbirth this winter died, no matter what might be the mode of treatment employed. The true nature of the disease, however, was not made known to the family until five or six days afterwards, when all the children and two maid-servants took it. It was also remarkable that a person residing in the house, who had laboured under scarlatina before, was attacked with bad sore-throat about the same time. I advert to this circumstance, because it is a fact, that persons who have had scarlatina before, if closely engaged in attending bad cases of the disease, are very apt to get sore-throat. I know several medical men to whom this happened, and the same thing occurred to myself not long since, though I had scarlatina in the malignant form.

Another circumstance connected with this case is, that the patient complains of severe pain in one of her ears, accompanied with deafness. This occurrence is frequently observed in similar instances; the inflammation spreads from the fauces along the Eustachian tube, until it reaches the ear, and hence we find many cases of scarlatina attended with more or less lesion of the function of hearing. It is very probable that this girl also got cold, for there is a considerable degree of tenderness about the external ear and over the mastoid process. In a recent lecture delivered at the Meath Hospital, I impressed on the class the necessity of making a careful examination of the parts where earache occurs during the progress of fever; it is very often a treacherous symptom, and you will find in the works of Abercrombie and Itard several cases in which it preceded fatal disease of the brain. I do not intend speaking on this subject at present, but the case before us puts me in mind of a form of otitis which is frequently met with, and on which it may be necessary to say something. Otitis, like conjunctivitis and inflammation of the tonsils, is very apt to attack persons of a scrofulous habit, and it is sometimes of importance to be able to distinguish this from the acute otitis, which comes on in a healthy person, as the latter is found sometimes in connection with disease of the brain, the former hardly ever. In scrofulous otitis, the means of diagnosis are drawn chiefly from the constitutional symptoms, the appearance of the patient, the obstinacy of the disease, and the sudden manner in which it gets better and then bad again. I lately saw an excellent example of acute scrofulous otitis, in a young lady of a decidedly strumous habit, living in Eccles street, and whom I attended, together with Mr. Leech, of Parliament street. She was attacked with violent earache, accompanied with some otorrhœa and tenderness of the external meatus, indicating inflammation. The pain, however, was intense, and far greater than the degree of inflammation seemed likely to produce; it remitted, or nearly intromitted, coming on violently about the same hour every day, and continuing to occasion intense agony for a few hours. Low diet, fomentations, leeches frequently applied, cathartics, blisters, all failed to produce relief. The disease, finally, suddenly yielded to ten grains of sulphate of quinine, given daily. The difficulty in such a case consists in determining how long we ought to persevere in the antiphlogistic method, and when we ought to begin with tonics suited to the neuralgic portion of the disease, for, like scrofulous ophthalmia, scrofulous otitis is accompanied by a degree of pain by no means proportioned to the violence of the inflammation. The acute healthy otitis generally comes on after exposure to cold; it is attended with severe pain, and considerable tenderness of the parts about the ear, and runs its course in a comparatively short period. Now, how is this acute otitis in the healthy subject to be treated? Recollect the disease is one of a very intense character; this pain is frequently agonising, and the tenderness and heat of the parts about the external meatus

are very great; recollect, too, that it may, and sometimes does, usher in disease of the brain, and let your treatment be, therefore, prompt and energetic. Purge the patient briskly, put him upon low diet and antimonials, and apply leeches in successive relays to the external ears, and over the mastoid process. In scrofulous otitis, on the contrary, the antiphlogistic treatment, both general and local, must be more cautiously applied, and must be sooner laid aside to be succeeded by the exhibition of tonic remedies. The greatest care and attention, however, is necessary before we decide to pass from one mode of treatment to the other, and we must be well convinced that we have sufficiently guarded against the danger of the brain becoming engaged in the inflammation, before we change to the tonic treatment; when we do, we must proceed at first cautiously, afterwards more boldly. Give the carbonate of iron, or the sulphate of quinine, watching its effects, and increasing the dose as you proceed; and in this way you will succeed in arresting the disease, and curing your patient. I would, however, strongly impress upon you the necessity of caution; feel your way, be sure that there is no active inflammation present, watch the effect of every dose you give; by doing this, you will not, as some have done, run the risk of inducing fatal symptoms. In many of these cases, it is hard to draw a proper line of distinction at first; adopt, therefore, the safe practice, and, though the disease be of an intermittent character, defer the use of tonics until you have removed inflammation; you only lose a little time, whereas, by having recourse to them at too early a period, you may do your patient irreparable mischief.

I shall now speak of the case of Christopher Nolan, which I trust you have all watched with attention. When this man came into the hospital, his condition appeared to be completely desperate; he has, however, not only rallied, but is now convalescing rapidly. It is unnecessary for me to enter into a detail of his case, as I trust you have all observed it through its different stages; I shall only remark, that on his admission he was labouring under fever of the worst character; his body was covered with maculæ; he lay constantly on his back, and had low muttering delirium; was unable or unwilling to answer questions; his breathing was oppressed; his pulse rapid, small, and failing: the powers of life awfully prostrated; in fact, he was in a state of apparently threatening dissolution.

My first object was to rouse the sinking powers of the system, and with that view I adopted the following treatment. He was put into a comfortable bed, and heat was restored to the surface by diligently rubbing his trunk and limbs with warm flannel. I next ordered a succession of flying blisters to the neck, chest, and abdomen. I may observe here, that his chest was heaving, there was a general wheezing audible over the whole surface, and he had that peculiar livid expression of countenance, and dusky hue of skin, which indicate an imperfect aeration of the blood. With the view

of stimulating the oppressed action of the respiratory nerves, I had two blisters applied, one on each side of the neck, above the clavicles ; after remaining on for two hours, these were removed, and two more applied over the supra-mammary region, then over the heart and right side of the chest, and lastly, over the epigastrium. In addition to this, he was ordered to have wine and chicken broth, and the following draught was prescribed, to be taken regularly every second hour until symptoms of reaction began to appear.

R. *Mistura camphoræ, 3j.*  
*Liquoris anodynæ Hoffmanni, 3ss.*  
*Spiritus ammoniæ aromatici, 3ss.*  
*Moschi grana octo.*

In employing blisters in this case, my object was to stimulate powerfully, and in rapid succession, the integuments of the neck, chest, and abdomen. The practice has in such cases been attended with very marked effects, and in ours proved extremely valuable. Its efficacy seems to depend, not on the discharge of serous fluid, or on any revulsive action of the blisters, but on the powerful stimulus applied to an extensive cutaneous surface. I may observe here, that, during the present epidemic, blisters have been one of our most efficient means of cure. In several bad cases, I have blistered the nape of the neck, the chest, hypochondrium, and nearly the whole of the abdomen, in succession, and often with remarkable benefit. In ordinary cases of fever, tenderness of the epigastrium, pain in the head, and derangement of the respiratory system, are best treated by the application of leeches, or even by the use of the lancet ; but in the present epidemic, I have observed that patients bear bleeding very badly, though practised at the commencement of the disease ; and the same rule applies, though with less force, to abstraction of blood by leeches or cupping-glasses. As far as my experience goes, local or general depletion should be resorted to with caution. I am not timid in the use of the lancet or leeches, but I have seen several cases of fever which terminated fatally, and these were chiefly cases where venesection had been performed at the commencement of the attack ; and, with respect to leeching, I have found that those cases were very difficult of cure, in which, relying on my experience of former epidemics, I had leeched too freely for what I considered to be local congestion.

With respect to the general employment of blisters in fever, it is, I believe, a prevalent but erroneous practice to leave them on much longer than is necessary. I seldom let them remain on longer than four or five hours ; I speak here of flying blisters, which are applied successively to the nape of the neck, inter-scapular region, chest, and abdomen. Sometimes two or three hours will be sufficient. It is true that a blister will seldom rise in this space of time ; but, though you have no serous discharge, the moment the skin under the blister becomes red, every purpose is accomplished ; if the blister be removed, and the parts dressed with spermaceti ointment,

it will rise in the course of a few hours. By acting in this way, two important advantages are obtained — you prevent the formation of bad sores, and obviate the risk of dysuria from the absorption of cantharides. It is in many cases extremely wrong to leave a blister on too long, and yet we see them frequently permitted to remain on for twelve, eighteen, and even twenty-four hours. If you excite the vessels of the skin by rubbing the part with a little proof spirit, or oil of turpentine, before the blister is applied, it will rise in three or four hours; if not, it can be again employed. From a number of experiments made at the Meath Hospital, I have ascertained that the time necessary for producing the action of a blister is much shorter than is generally imagined. In some cases, three hours; in some, even two were sufficient; and in almost every instance, the irritation of the cutaneous surface was effected in four hours.

I have stated that in this case we gave wine and chicken broth. With respect to the regulation of diet, I may observe that, in the present epidemic, a light nutritious diet may be prescribed at an early period of the disease. After the fourth or sixth day, we are in the habit of giving chicken broth, light beer, and even small quantities of wine. I do not speak here of chicken tea, as it is termed, but of broth of good strength and flavour. There is another point with respect to nutriment which I would beg leave to impress on your attention. When you give nutriment, be careful in observing the usual periods of meals. The space of time to which I limit the giving of chicken broth, jelly, arrow root, and other mild articles of diet, is from eight o'clock in the morning to eight in the evening. Always make it a rule that your patient shall take nutriment within the space of those twelve hours during which he is accustomed to take his meals when in health, and allow him nothing but mild diluent fluids during the night. I am persuaded that I have seen much benefit derived from following this simple plan.

A few words in conclusion, with respect to the stimulant draughts which we employed in this case with such remarkable effects. During the prevalence of those doctrines which attributed all fever to local inflammation, diffusible stimulants fell into neglect and disuse; but, since our knowledge has been rendered more certain and fixed, by the results of a truer pathology, we have learned to estimate their real value. I do not by any means exaggerate, when I say that I have seen many lives saved by a combination similar to that employed in the present case. Where there is great prostration of the powers of life, oppression of the nervous functions, and low, muttering delirium, I do not know of any remedy which can be prescribed with more advantage. You will, of course, while employing medicines of this description, attend to the state of the bowels.

In the mixture we have ordered, you will perceive that the principal ingredient is musk. Musk exercises a stimulant effect on the

nervous system, without having any tendency to produce cerebral congestion or coma. Unlike those remedies which powerfully affect the nervous system, it does not produce intoxication or narcotism. Hence it is that musk proves such a valuable stimulant in cases such as I have described, where there is reason to apprehend congestion of the brain. At the same time that you prescribe musk, you should assist its action by blisters, judiciously applied. They may be applied along the sides of the neck, or over the chest, to excite the nerves of the heart, lungs and diaphragm; or you may apply them between the shoulders, and to the back of the neck, where your object is to act on the brain and spinal marrow. In cases like this, the best places for applying blisters are the neck, region of the heart, epigastrium, and spine. The blister should be small, and you should make up for their want of size by successive applications.

I have only to add that the treatment adopted in this case succeeded in again rousing the almost suspended powers of the system, the patient rallied, and his fever assumed a much more manageable aspect. I was obliged, however, to have recourse to the tartar emetic mixture with opium, in order to produce sleep. This completed his cure; from the time of its exhibition, everything went on well.

Two cases of dropsy, in the chronic ward, next claim our attention. Both have occurred in persons who have previously enjoyed tolerably good health, and in both the disease seemed to be unaccompanied by organic lesion of any important viscus. One of the patients, J. Austin, states that he has been ill two months before he came into hospital, and acknowledges that his illness was the result of long continued habits of inebriety. Careless and intemperate in his mode of life, and frequently exposed to cold and wet, he got an attack of bronchitis, accompanied by a sense of constriction about the chest, and difficulty of breathing. He was bled for this, and states that the bleeding relieved his dyspnœa; but about this period he remarked that an anasarcaous swelling appeared in his face, neck, and chest.

In this case we have a specimen of the ordinary history of dropsy in this country:—first, intemperate habits, next, exposure to cold, followed by bronchitis or pneumonia, and then dropsy, commencing in the face, chest, and upper extremities. I have on a former occasion pointed out to the class the importance of observing in what part of the body the dropsical swelling first appears, because, by doing so, we obtain a more accurate idea of its nature, and are furnished with a clue towards discovering its source. Dropsy is generally the consequence of organic disease of some deep-seated viscus. When it is produced by thoracic disease, as bronchitis, pneumonia, or affections of the heart, it is said that the swelling always begins in the face, neck, trunk, and upper extremities; when it depends upon chronic hepatitis, disease of the spleen, obstruction of the system of the vena porta, or disease of the mesenteric glands,

the swelling commences in the abdomen, and then proceeds to the lower extremities; but when it arises from mere debility, the consequence of hectic fever, long continued diarrhoea, or a cachectic state of the system, the effusion is first observed in the lower extremities, coming on in the evening, and again disappearing towards morning. The history of dropsical swellings, therefore, by informing us in what part they first appeared, is often sufficient to indicate the general nature of the producing cause.

When this man came into the hospital, his cough had disappeared, and there was not any unequivocal symptoms of disease of the heart, but he had considerable dropsical swelling of the face, chest, and superficial parts of the abdomen; his appetite was bad, and on examining his urine, we found it loaded with albumen, and of the specific gravity of 1029. Though he had no fever or dyspnoea at the time, we commenced the treatment by general bleeding, because he was a person of rather robust constitution, and on account of his dropsy having originated in cold. In persons who are able to bear bleeding, and where the disease has commenced in an acute form, you may often commence the treatment of dropsy by a single bleeding with great advantage, even though there be no fever or local inflammation present. We next prescribed an aperient injection, to be followed by a vapour bath. I then, by way of trial, give him an electuary containing some diaphoretic medicines, and found that it acted well on the skin, and that sweating could be easily induced. This furnished me with a key to the after treatment. Whenever you find that sweating can be easily brought on in dropsical cases, you should obey the hint given by nature.\* You should not, under such circumstances, have recourse to mercury, or hydragogue purgatives, or diuretics; you are to open the passage which nature has pointed out, you are to encourage diaphoresis, and you may rely upon it that you will in this way effect an easier, safer, and more permanent cure than you could by any of the various modes employed for similar purposes. We therefore gave this man a powder containing four grains of Dover's powder and five of nitrate of potash three times a day. The Dover's powder is tempered by combining it with nitrate of potash, which is an antiphlogistic, and prevents the former from exercising a heating effect on the system. Having continued these powders for seven or eight days, we commenced the exhibition of opium, in doses of half a grain, four times a day, to be increased after a few days to half a grain every fourth hour. Under the use of vapour baths used daily, and opium to the amount of three grains in the twenty-four hours, the man has improved wonderfully, and the dropsical swelling is fast subsiding. Opium has here, you may have remarked, produced no bad effects. The tongue is neither dry nor furred, and it has not any of that appearance which is observed in persons who are in the habit of taking opium; his appetite is unimpaired, his bowels regular, and his strength undiminished.

\* [A highly practical remark, especially in anasarca. — *Ed.*]

Now why did I give opium in this case? The more advanced students will perceive that I have treated it nearly in the same way as I treat cases of diabetes: because I have taught, and have been the first to teach, there seems to be an analogy between chronic dropsy and diabetes, and because experience has proved to me that this mode of treatment is most likely to be attended with success. I shall not dwell on this point at present, as I have already published a paper on it in the *Dublin Medical and Chemical Journal*, to which I refer you, merely observing here, that opium and other diaphoretics increase strength, remove the dropsical swelling, diminish the quantity of albumen in the urine, and bring on convalescence without producing any bad effects on the head or digestive system. Dr. Osborne, Dr. Gregory, and Dr. Bright, have asserted that the presence of albumen in the urine arises from a particular disease of the kidney, in which the whole texture of the organ is altered, it becomes hypertrophied, finally harder than natural, and of a pale yellowish colour. On the other hand, Dr. Elliotson, Dr. M'Intosh, and myself, have opposed this view of the question. It is true that this kind of kidney is sometimes found to exist with an albuminous state of the urine, but this is by no means invariably the case. I have seen many cases of albuminous urine which yielded completely to the exhibition of opium, and this surely could not happen if organic disease were present. And though the cases in which this has occurred are not very numerous, still the evidence is good, and it cannot be denied that such a state of the urinary discharge may, and does, depend on constitutional causes totally independent of disease of the kidneys. I have very little doubt that it is to such an origin the present case is to be referred, and I feel confident that we shall cure it with opium. I am anxious that you should attend to this case and watch the result, for the treatment is quite different from that employed by others. I say this without meaning to claim any originality; but I may be permitted to say, that it is a mode differing very much from those generally pursued. It cannot be used in cases where fever or local inflammation is present; but when the local and general excitement has been subdued, or when the case is chronic and unaccompanied by quick pulse, or any symptoms of visceral inflammation, it may be employed with safety and advantage.

The second case is that of the patient Matthew Gray, a man of middle age, and rather robust constitution. On admission, he stated that he had been dropsical for about twelve days, and complained of cough, dyspnea, constriction of chest, and feverish symptoms. His cough was hard, short, incessant, preventing sleep, and increased by every attempt at full inspiration. He had general wheezing, much oppression about the chest, and scanty expectoration of frothy mucus. His pulse was 84, soft and rather weak; he complained of nausea and loss of appetite, and had œdema of the lower extremities. On examining the chest, I found it sounded clear on percussion, and that the physical signs present

were those of bronchitis passing into the stage of supersecretion. In addition to this, there were symptoms of engorgement in the lower and posterior parts of the lung.

Here, then, we had a case of dropsy supervening on acute bronchitis. I therefore ordered him to be blooded immediately, and afterwards to have cupping-glasses applied over the congested part of the lung. The local abstraction of blood was followed by remarkably good effects; it relieved the cough and constriction of chest, and diminished materially the pulmonary congestion. I next prescribed the following mixture, of which he was directed to take one tablespoonful every hour.

R Misturæ amygdalarum, 3xij.  
Antimonii tartarizati granum,  
Nitratæ potassæ, 3ij.  
Tinctura hyoscyami, 3iss.  
Tincturæ digitalis, 3ss.

A mixture like this is well adapted for such a case, it removes the febrile condition of the system, and, by its demulcent and sedative properties, allays the cough and bronchitic irritation at the same time that it determines to the kidneys. Those medicines which are termed demulcent, are frequently of great value in the treatment of bronchitis; you will often derive more benefit from gum Arabic, spermaceti, almond emulsion, and the like, than from any other class of remedies. In the present case, we combined them with sedatives and narcotics: and as the remedies prescribed under such circumstances should be antiphlogistic, we added a grain of tartar emetic and two drams of nitrate of potash. I have already spoken of the powerful antiphlogistic properties of a combination of tartar emetic and nitre, and dwelt on the benefits derived from it in many forms of inflammatory disease, so that it is unnecessary for me to say anything at present on the subject. It is obvious to all, that the tinctures were added on account of their sedative and narcotic properties, tending to remove irritation and induce sleep, of the want of which the patient complained. But you may ask me why I did not order opium: simply because the disease was in its acute stage, and at a period when opium is apt to produce excitement of the system, and aggravation of the local symptoms. Instead of opium, I gave hyoscyamus, which neither increases heat, produces headache, nor checks expectoration; and to this was added digitalis, a narcotic possessed of considerable antiphlogistic properties. Of all the narcotics, digitalis may be given with the greatest safety in cases where antiphlogistic treatment is required.

It is unnecessary for me to follow up this case through all its details. It will be sufficient to state that, by gradual changing the nature of the treatment as inflammation declined, and particularly by the proper employment of powerful purgatives, I have succeeded in producing a rapid amendment in his symptoms. It

may be, however, necessary to explain why I used purgatives, and in what way they were exhibited. In cases where extensive bronchitis has given rise to pulmonary engorgement and dropsy, when you have relieved the acute symptoms by bleeding, leeches, or cupping, and other antiphlogistic means, and when there only remain some wheezing, oppression of the chest, and rather copious expectoration, you will often effect a vast deal of good by the judicious employment of powerful purgatives. You will clear the chest, relieve the breathing, and diminish the dropsical effusion. In the present instance, the patient took the following bolus:—

- R Pulv. jalapæ — rhei — scammoniæ,  $\frac{1}{2}$  gr. v.  
 Elaterii, gr. ss.  
 Bitartratis potassæ — sulphatis potassæ,  $\frac{1}{2}$  ʒss.  
 Syrupi zingiberis, q. s., ut fiat bolus.

This acted powerfully, and its operation was followed by marked diminution of the pulmonary engorgement and dropsical swelling. I have frequently endeavoured to impress upon the class the truth of an observation made by Dr. Paris, that in the exhibition of remedies, much better effects are obtained by combining several analogous remedies in small quantities, than by giving a single one in a large dose. By combining substances which are of the same nature, that is to say, which are individually capable of exerting the same effect on the system, we are capable of producing more decided effects, even though these substances be given in diminished quantity, than if we prescribed any one ingredient of the combination in a full dose. I refer to this general principle, in order to explain why I had recourse to so many different medicines, instead of employing a single powerful ingredient in considerable quantity. It explains why instead of giving at once fifteen grains of the powder of jalap, I gave five grains of jalap, five of rhubarb, and five of scammony, and added to these half a grain of elaterium, and a small quantity of cream of tartar and sulphate of potass. With respect to elaterium, I may observe that it has been strongly recommended in those cases of dropsy where there is no irritation of the digestive system present. Its action on the intestinal tube is very energetic, and from the quantity of watery secretion which it generally brings away, it is of great utility in removing anasarcaous swellings.

These are the principal observations which I have to offer with respect to this case. I may mention, that as the patient complained much of restlessness, we prescribed half a grain of morphia, to be taken at bedtime. This succeeded in producing sleep, a most important point in the treatment of all acute affections. We have now omitted the use of the more powerful remedies, and have prescribed to-day a decoction of Iceland moss with tincture of opium, to act as a pectoral demulcent, and he has been allowed chicken broth and jelly. He is going on at present in a very satisfactory way, but it will be necessary to watch him carefully during his

convalescence, and obviate the occurrence of a relapse. If discharged at present, and before convalescence is perfectly established, he would in all probability relapse, and soon become much worse than ever. Hence I intend to keep him here for a month or six weeks. As long as I have been attached to public hospitals, I have made it a fixed rule, in all cases where a cure was possible, to keep the patient until it was confirmed. Whenever I was obliged, under the pressure of urgent necessity, to dismiss a case before healthy action was completely re-established; or whenever patients left the hospital prematurely of their own accord, I have observed that such persons, particularly if placed in the lower ranks of life, and subject to the numberless accidents and exposures of poverty, almost invariably returned in a far worse condition than before. It is much better, though perhaps it does not make so striking an appearance in hospital returns, that a certain number of patients should receive all the benefits derivable from such institutions, than that a greater number should pass through them in the year, and be hurried out of them in a state of imperfect convalescence. This observation particularly applies to fever hospitals, and is, I fear, too little attended to in this city. Certain I am, that a vast number of the cases of incurable pulmonary and intestinal disease which are admitted annually into the Meath Hospital, have had their origin during the state of debility in which the patients were when dismissed from a fever hospital. Improper diet, imperfect clothing, bad lodging, damp rooms, are borne by the constitutions of the poor with comparative impunity as long as they are in a state of health; but not so when they are debilitated by a recent attack of fever, treated or maltreated by active remedies, and dismissed from hospital in a week or ten days after the crisis has taken place. How injurious to persons so debilitated the change from the warmth and comfort of a hospital to the cold and desolation of a damp garret or cellar! Add to this, that many of them, at the time of their discharge, still evidently bear the marks of mercurial action in their system, and many have their hair very short, in consequence of the head having been shaved during their illness. Hence many catch colds that affect the ears or eyes; hence many become deaf, and not a few get sore eyes; while the number of those in whom the sequelæ of the fever rapidly induce incurable chronic diseases is so great, that, were the balance of the account to be fairly struck out, it would be found fever hospitals do less good to the public health than is generally imagined.

## LECTURE XVIII.

It is my intention to-day to make a few observations on the scarlet fever which now prevails as a destructive epidemic in Dublin, and many other parts of Ireland. The history of such epidemics is very interesting, and tends to shed much light, not only upon the changes which diseases undergo, but upon the fluctuations of medical opinions and treatment. In the year 1801, in the months of September, October, November, and December, scarlet fever committed great ravages in Dublin, and continued its destructive progress during the spring of 1802. It ceased in summer, but returned at intervals during the years 1803-4, when the disease changed its character; and although scarlatina epidemics recurred very frequently during the next twenty-seven years, yet it was always in the simple or mild form, so that I have known an instance where not a single death occurred among eighty boys attacked in a public institution. The epidemic of 1801-2-3-4, on the contrary, was extremely fatal, sometimes terminating in death, as appears by the notes of Dr. Percival, kindly communicated to me, so early as the second day. It thinned many families in the middle and upper classes of society, and even left not a few parents childless. Its characters seem to have answered to the definition of the *scarlatina maligna* of authors, for a description of which I beg leave to refer you to the Cyclopædia of Practical Medicine, where you will find an article on the subject by Dr. Tweedie. In making this reference, however, I do not wish to be understood as expressing my unqualified approbation of the article in question, for I must in candour confess that it falls far short of what we might have expected from a physician of Dr. Tweedie's learning and experience. The long continuance of the period during which the character of scarlet fever was either so mild as to require little care, or so purely inflammatory as to yield readily to the judicious employment of an antiphlogistic treatment, led many to believe that the fatality of the former epidemic was chiefly, if not altogether, owing to the erroneous method of cure then resorted to by the physicians of Dublin, who counted among their numbers not a few disciples of the Brunonian school; indeed, this opinion was so prevalent, that all those whose medical education commenced at a much later period, were taught to believe that the diminished mortality of scarlet fever was entirely attributable to the cooling regimen, and to the timely use of the lancet and aperients, remedies interdicted by our predecessors. This was taught in the schools, and scarlet fever was every day quoted as exhibiting one of the most triumphant examples of the efficiency of the new doctrines. This I myself learned—this I taught; how erroneously will appear from the sequel. It was argued, that had the cases which proved fatal in 1801-2 been treated by copious depletion in their very com-

mencement, the fatal debility would never have set in, for we all regarded this debility as a mere consequence of previous excessive reaction. The experience derived from the present epidemic has completely refuted this reasoning, and has proved that, in spite of our boasted improvements, we have not been more successful in 1834-5 than were our predecessors in 1801-2.

Before I detail more particularly the symptoms that accompany the present epidemic, I wish to enter a little at large into the subject of the changes and variations which the same disease is observed to undergo at different periods of time. This is a topic which occupied some of the master minds of antiquity, and upon which the greatest of modern physicians, the illustrious Sydenham, bestowed considerable labour. It has been too much neglected of late, and consequently I consider it my duty to call your attention to it, and I cannot do this better or more forcibly than by communicating to you a literal translation which I have made from the German of my friend Dr. Autenrieth's observations on this subject. The task of translation is always not only difficult but irksome; but if, as in the present instance, I can by this means convey to you valuable information not before presented to my class, or to the public in English, I never decline the labour. What I am now about to read is, indeed, most important, and well deserves the deep attention of every practical physician.

The third cause, connected with time and capable of modifying diseases, is of infinite importance, both in a theoretical and practical point of view, but has seldom attracted much attention. Its existence is attested by its effects alone, for its nature remains unknown. I allude to the *constitutio morborum stationaria*, first noticed by Sydenham, but, since his time, nearly forgotten, or else confounded with the permanent influence of the seasons, or the accidental atmospherical changes spoken of above. All diseases, contagious and non-contagious, acute and chronic, (the latter, however, seldom, except when attended with some degree of general excitement,) have been observed to preserve a certain *constitution or general character*, which continues for a number of years in succession, with occasional interruptions, until it is displaced by another constitution of a different character. Thus, during one period, diseases are remarkable for being frequently accompanied by a sensation of extreme weariness, sudden sinking of the strength and vital powers, unpreceded by any evident marks of excitement, and attended by a disposition to pass into true typhus. During another period, the tongue is in general loaded with a thick white or yellowish coat, and many other symptoms of derangement in the digestive organs, such as a bitter taste, costiveness, or diarrhoea, are constantly observed.

During a third period, diseases are characterised by a remarkable degree of vascular excitement, an evident tendency to local determinations, a frequent formation of morbid productions; in a word, by all the symptoms of inflammation.

It is not known whether the transition from one of these periodic constitutions to another takes place suddenly or gradually; but the latter supposition appears more probable, except when the transition is accompanied by unusually great atmospheric changes. The erysipelatous affection, which, both in England and Germany, succeeded the gastric and accompanied the first appearance of the inflammatory period, seems to have been an example of the gradual transition. Accurate observations are still wanting to determine whether this periodic constitution is confined to certain parts of the world, or extends over the whole, and whether its different species follow each other in a regular order of succession. If their order of succession should at any time be determined, it will enable the physician to foretell the character and most appropriate treatment of future diseases. The above question cannot be answered without very great labour spent in the investigation of the history of diseases in all ages and all countries, and are therefore foreign to the present work.

The general indications of course vary with the nature of the prevailing constitution; and, consequently, during one period stimulating remedies, during another alvine evacuations, and during a third venesection and the antiphlogistic plan, will constitute the most effectual treatment.

This very circumstance has caused much confusion in medical opinions, and has occasioned the reputation and the downfall of many an infallible system, each of which is in its turn consigned to oblivion, and perhaps again revived as a novelty at some future period. The English boast much of the astonishing improvements in science, and deride the ignorance of their predecessors, regardless of the old proverb—"Everything has its day." Whenever, therefore, the periodic constitution undergoes an alteration, they either obstinately uphold their usual plan of treatment to the manifest injury of their patients, or else blindly embrace some system, to them new, but which really rests upon ancient and established principles. In general, they do not fail to make use of so much exaggeration in support of their opinions, and thus succeed in misleading so many, that none but very well informed physicians can distinguish the fallacy of their arguments.

The medical history of Great Britain affords many striking proofs of the truth of these assertions, and is replete with examples of the singular obstinacy with which the English cling to opinions once formed, a circumstance which has materially contributed to obstruct their attaining to general views and impartial conclusions. Even to this day, a warm contest is carried on (less, however, in books than in the debates of learned societies) between the senior and the junior parts of the profession, the former still inclining to Brunonianism, while the latter attribute nearly all diseases to inflammation. Both, indeed, appeal to experience to prove the justice of their principles, and seem entirely to forget that while the propriety of their practice, as applied to particular cases,

remains unimpeached, the very nature of the disease themselves may have been changed. A summary review of the character assumed by diseases during the last twenty years, both in England and other countries, will perhaps afford a solution of this question. About the end of the last, and during the three or four first years of the present century, the proportion of nervous fevers to other diseases was as one to eighteen in Plymouth (Woolcombe), as one to sixteen in London (Willan, as one to ten in Newcastle (Clarke), and in Liverpool, one to five (Curry). Nor was this scourge of mankind less severely felt upon the continent, where typhus, and diseases closely allied to it, committed extensive devastations, particularly during the epidemics of Erlangen, Jena, Kiel, Ratisbon, and Vienna. Cadiz and Seville were at the same period depopulated by the yellow fever, and Europe in general suffered much from repeated visitations of influenza. An inclination to a sudden sinking of the vital power, unpreceded by violent reaction, and unaccompanied by any marked symptoms of a gastric or inflammatory nature, constituted at that period the characteristic form of acute diseases, which were always preceded and attended by an unaccountable degree of debility. Stimulating and tonic medicines obtained, therefore, much celebrity, and every physician who practised during that period, attests the injurious or even fatal effects which were produced by the use of venesection, and other depletory remedies. What is still more remarkable, an epidemic typhoid pneumonia prevailed in many parts of Germany during the years 1800-1-2, in which the speedy production of an inflammatory state, by means of bark and ether, was the only method which afforded a chance of recovery. These facts must impress every impartial mind with the conviction, that the constitution of diseases has undergone much alteration since that period, and explain why physicians did not then employ copious venesection, but were obliged to content themselves with ordinary cold effusions, acids, and mercury.

The reign of typhus appears to have ceased with the influenza of 1804, when a new constitution began, at first more remarkable for the disappearance of nervous fevers and other contagious diseases, than for any peculiar character of its own. Catarrhal and rheumatic complaints, partly attributable to the weather, prevailed for some time, and fevers of an intermittent type became more frequent, forming an evident transition from the purely typhus constitution to that of the vascular excitement of the following years. Some remnant of the typhus constitution was indeed still perceptible in the pectoral complaints which prevailed in London during the winter of 1804-5, and were attended with remarkable debility, requiring the greatest prudence in the use of the lancet. Venesection was indeed often entirely contraindicated, and Bateman states that it sometimes even proved fatal. The constitution, however, soon developed itself more decidedly, became more universally diffused, and obliged physicians to relinquish their former plan of treatment

and adopt other measures. Derangement of the alimentary canal became its prominent feature in the summer and autumn of 1804, and diarrhœa, terminating in dysentery, was often met with.

This constitution suffered indeed a check from the cold of 1805, but it increased again during the following years, and afterwards became still more prevalent, manifesting itself by headache, a bitter taste in the mouth, a loaded yellow tongue, irregularity of the bowels, nausea, and anorexia. The utility of purgatives now became so obvious, that Hamilton's doctrines soon obtained as much celebrity as had been before enjoyed by the stimulating system. The nervous fever at Nottingham in 1807, the dysentery at London in 1808, the scarlatina in Edinburgh in 1805, and the measles at the same place in 1808, all required the purgative plan of treatment, and calomel became the favourite cathartic. The advantage then derived from the use of purgative medicines is abundantly testified by the writers of that period. This gastric constitution appeared also on the continent, but its progress was less rapid there than in England, where the inhabitants live in a manner calculated to augment or even to produce a tendency to gastric diseases. There were likewise other circumstances which impeded the formation of this constitution on the continent. Thus in Germany, the purely nervous constitution had scarcely yielded to catarrhal and rheumatic affections, when it was again revived in that unhappy country by the political occurrences of 1805-6-7. Typhus seldom, however, assumed the character of exquisite, for the rheumatic and catarrhal affections with which it was mixed partook somewhat of a gastric nature, as was proved by the great benefit derived from the exhibition of emetics and calomel. This appears in accordance with the fact that the gastric constitution was more fully developed wherever the ravages of war had not extended, although it still required less attention in the treatment than the rheumatic symptoms, then likewise prevalent. Thus the agues which were common at Tübingen about the end of 1806, commenced in general with pain in the belly, vomiting, and irregularity of the bowels; a yellow furred tongue, headache, and tremors of the parotids, were of frequent occurrence, and in general gastric symptoms were by no means rare. These symptoms gradually gained ground, and the reputation of ipecacuanha and cathartics increased in the same proportion. At Ratisbon the *constitution* was remarkably gastric in the autumn of 1809, and a nervous fever prevailed at Weimar in 1809-10, which was accompanied by bitter taste in the mouth, diarrhœa, nausea, and vertigo. Active catharsis was injurious in this epidemic, but much benefit resulted from the exhibition of castor oil. The advantage derived about the same time in Berlin from the treatment of fevers by emetics and cooling purgatives, proved that they were there also complicated with gastric derangements.

The gastric constitution had scarcely established itself, or become pretty generally diffused, when a new character, viz., the inflam-

matory, appeared upon the stage, and has ever since continued, sometimes combining itself with the gastric to form diseases of a mixed character, such as erysipelas, and sometimes, when favoured by the seasons or local circumstances, raising itself to the rank of the chief performer. With its appearance, venesection, which had previously fallen into disrepute, became once more a favourite remedy, and in the course of a few years was pushed so far, particularly in Great Britain, that Sangrado's maxim, "C'est une erreur de penser que le sang soit nécessaire à la conservation de la vie, on ne peut trop saigner un malade," seems to have been the general rule of practice. The same inflammatory constitution became also general in Germany, but there it neither attained such a height, nor required such active treatment as in Great Britain, where many circumstances favoured its more perfect development; with us it generally yielded to the use of acids, cold applications of mercury, but in England it called for copious bloodletting. Even in 1810, diseases had become more inflammatory at Tübingen than they had been previously; but the change was still more perceptible in 1813, when the antiphlogistic treatment required the aid of small venesectiōns, and nervous fevers were accompanied both by inflammation and derangement of the digestive organs. Erysipelas was also frequent, and in many cases were of a marked inflammatory character. Erysipelas and true inflammatory fever, requiring the use of the lancet, were common at Ratisbon in 1811; Parrot exhibited acids, especially the acetous, with great success in the epidemic nervous fever, which raged at Dorpat in 1812, and a diarrhoea of a bilious inflammatory nature prevailed at Königsberg during the same year. This important change in the *constitution* became very evident in the nervous fever at Berlin in 1813, as well as in the formidable epidemic described by Hufeland, which ensued after the war, and raged in the north of Germany during that and the preceding year. Although but a few years before the strongest stimulants had been necessary to obviate the paralysis which supervened even in the beginning of the disease, yet an opposite practice was now required, and antiphlogistic remedies were alone found capable of preventing the vascular excitement from terminating in inflammation of either the head or chest. In short, the inflammatory *constitution* has been prevalent in Germany ever since the years 1810-11, sometimes in its pure and marked form, and sometimes complicated with gastric and rheumatic symptoms.

This *constitution* became general at the very same period in Great Britain. Dr. Clutterbuck, of London, had indeed ascribed the origin of fever to inflammation of the brain, so early as 1807, and about the same time Dr. Steiglitz, of Hanover, had recommended the antiphlogistic treatment of scarlet fever, in preference to the stimulating plan then in vogue. But as the inflammatory was then still subordinate to the rheumatic and gastric constitutions, their opinions did not gain many converts. But the inflammatory constitution had increased so much in the autumn of 1809, and

the winter of 1810, that even Dr. Bateman was obliged to prescribe venesection in fevers, a practice quite at variance with his former views. Erysipelatous inflammation became common in London, Aberdeen, and Leeds, and numerous cases of puerperal fever occurred in the latter towns, which, according to Gordon and Hey, never terminated favourably, except when bleeding and purgatives were employed with freedom. But it was not until 1813, when the inflammatory constitution had fully developed itself, and the bad consequences arising from violent determination of blood to the head in nervous fever could not be averted except by decisive measures, that venesection came into general use in Great Britain in consequence of a publication by Dr. Mills, who had prescribed it with much success since 1810. In the same year that truly estimable physician, Dr. Thompson, published his admirable work upon inflammation. Blackall recommended bloodletting in several species of dropsy, and Armstrong employed the same remedy, combined with large doses of calomel, in the inflammatory puerperal fever which was prevalent at Sunderland. Venesection became from this time as great a favourite as ever in England, not, however, to the exclusion of purgatives, which were indicated by the derangement of the stomach and bowels that accompanied the inflammatory constitution. Both these remedies were found extremely beneficial in the nervous fever which was epidemic in Ireland in 1813-14; its inflammatory character being clearly evinced by a hard and full pulse during its first stage, and a violent determination of blood to the head, by which the headache and raving are increased, while its gastric type was not less strongly marked by tenderness of the epigastrium, costiveness, or else frequent and unnatural alvine discharges, together with a loaded tongue and bilious vomiting. The latter symptoms were, in Dr. Grattan's opinion, of such importance, that he gave a decided preference to the purgative plan. The fever, which had previously been confined to Ireland, became generally diffused over the rest of Great Britain after the famine of 1816, and continued without intermission for four years. Its inflammatory character being peculiarly favoured, both in England and Scotland, by the habits of the inhabitants and the situation of these countries, venesection attained an unexampled degree of celebrity, notwithstanding the representations of the Irish physicians, who used that remedy with more moderation. It was soon believed that there is, literally speaking, no disease whatever in which the lancet ought not to be used, and as the human mind is ever prone to extremes, it was soon generally considered, both in England and Scotland, to be a well founded pathological inference, "there is but one species of fever, viz., the inflammatory, and consequently venesection is the only true anti-febrile remedy. Such is the case in England at present, and it must have been so always, and in every part of the world." I flatter myself, however, that the preceding observations and statements of facts, drawn from authentic sources, sufficiently negative these assertions, and establish the real

existence of a change in the constitution of diseases, notwithstanding what Dr. Duncan once said to me, "that such changes existed only in the imagination of physicians."

It is now twelve years since Dr. Autenrieth, in his account of the State of Medicine in Great Britain, made the foregoing interesting observations; and to me it appears that the history of the diseases which have since prevailed affords convincing proofs that the then *inflammatory constitution* has again subsided, and is now replaced by a *typhous* type: indeed, it cannot be denied that a very great difference exists not only between the present and the former *scarlatina*, but also between the fever of the present day and that which prevailed shortly before Dr. Autenrieth published. But this is too important a question for us to decide, without more reflection and thought than I have been able to bestow on it, and without more facts than I have been able to collect. The opinion I have brought forward I do not wish to be received as established; I look upon it as probably well founded, but as yet not proved, except so far as to merit further consideration and excite further discussion.

Indeed, I have for the present been obliged, by the pressure of other engagements, to postpone a more accurate examination of this subject, and a more severe scrutiny of the facts which just now crowd into my memory; but I conclude with remarking, that the wide-spreading epidemic influenza which lately visited the whole of Europe, including the British Isles, was not only truly remarkable, both for the violence of the feverish symptoms and of the local congestions of the chest and heart which accompanied its attack, but likewise for the unexpected relation which it was found to bear to all measures of active depletion. I appeal to the profession for their testimony on this matter—I ask whether all our preconceived opinions as to the *à priori* indications for venesection, leeching, and purging, were not found to be contradicted by the effects of these remedies in the epidemic influenza of 1833. The sudden manner in which the disease came on, the great heat of skin, acceleration of the pulse, and the intolerable violence of the headache—together with the oppression of the chest, cough, and wheezing—all encouraged us to the employment of the most active modes of depletion, and yet the result was but little answerable to our expectations, for these means were found to induce an awful prostration of strength, with little or no alleviation of the symptoms. In some who were thus treated, recovery was protracted and doubtful, and the strength was not restored for several months. Indeed, nothing was more curious than the length of time which was necessary for some persons, in order to recruit their strength after an attack of this influenza, although that attack had not continued more than a few days, and had been judiciously treated, without bloodletting or unnecessarily debilitating remedies. I have known some who lapsed into a cachectic state of long continued debility from which they never recovered; for, while thus reduced, they fell victims to the first acute complaint which seized them. The influenza above

referred to fully confirmed the opinion I had long entertained, that in acute diseases debility and exhaustion of the vital power are by no means in every case either caused by, or proportioned to, a state of previous excitement. This opinion received further support from the symptoms and phenomena exhibited by the Asiatic cholera, in which the stage of debility and collapse commenced, and too often closed, the scene. Why do I dwell upon these occurrences, and why have I so frequently referred to the opinion above expressed? Simply because the prevalence of the contrary opinion laid the foundation for the injudicious and exclusive application of the lancet, and of the antiphlogistic method generally, in Britain, and was, consequently, the cause of working excessive mischief. But I must have done, and must defer the special pathology of the scarlatina, lately epidemic, to our next meeting.

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## LECTURE XIX.

I HAVE already mentioned that the disease called scarlet fever assumed a very benign type in Dublin soon after the year 1840, and continued to be seldom attended with danger until the year 1831, when we began to perceive a notable alteration in its character, and remarked that the usual undisguised and inflammatory nature of the attack was replaced by a concealed and insidious form of fever, attended with great debility. We now began occasionally to hear of cases which proved unexpectedly fatal, and of families in which several children were carried off; still it was not until the year 1834 that the disease spread far and wide, assuming the form of a destructive epidemic. The nature of the disease did not appear in the least connected with the situation or aspect of the patient's dwelling, for we observed it equally malignant in Rathmines as in Dublin, on the most elevated habitations on mountains as in the valley of the Liffey. It raged with similar violence at King's Town, and throughout the provinces, exhibiting, so far as I have been able to learn from country practitioners, the same type over the whole of Ireland. The state of the weather seemed to exercise no influence either upon its diffusion or its symptoms, which continued to exhibit equal virulence, no matter whether it was wet or dry, warm or cold, calm or stormy. The contagion seemed to act as a more deadly poison on the individuals of some families than upon those of others, and, consequently, when one member of a family had died, there was always much reason to fear for the others when attacked. At first I thought that its greater severity in such cases could be traced to a strumous habit, but subsequent experience did not confirm this suspicion, for the most scrofulous family I ever saw went through the dis-

ease without a death, whereas in some others the mortality was great, although not a single indication of a strumous diathesis could be detected. Many parents lost three of their children, some four, and in one instance which came to my knowledge, five very fine children were carried off. As usual in such epidemics, the degree of intensity with which different persons were attacked varied exceedingly, some exhibiting the mildest form of scarlatina simplex, which required no treatment, and scarcely confinement to the room, while the majority were severely affected. When the disease was violent, it assumed one or other of the following forms:—

*First.*—It at once produced not merely fever with sore throat and headache, but such violent congestion of the brain, and determination to the head, as occasioned convulsions and apoplectic coma on the first or second day. This happened to a fine young woman of robust habit in Worburgh street, to whom I was called by my friend Dr. Brouton. She was attacked with convulsions on the second day, and died comatose on the third. In her the scarlet eruption was extremely vivid and general, a fact I notice as a proof that the congestion of internal organs was not caused by any retrocession of the eruption. In truth, as will appear hereafter, the worst cases had the most general and most intense cutaneous efflorescence. When this tendency to the head took place in so violent a manner at the very onset, the patient was seldom saved; sometimes, however, very active measures of depletion, general and local, relieved the brain, and the case then went on favourably. This happened in a young gentleman residing in upper Baggot street, to whom I was called by the late Mr. Nugent, of Merrion row. When the scarlet fever attacked a person subject to epileptic fits, the tendency to the head was increased by the epileptic habits, and the fits of convulsions at once supervened. Thus in the case of a gentleman, aged twenty-two, who had been for several months treated by Mr. Colles and me for epilepsy, the fits commenced on the second day of scarlatina, and continued with frightful violence until the fifth day, when they proved fatal. In a young lady residing near Black Rock, to whom I was called by Dr. Wilson, precisely the same thing occurred. She had been subject to epilepsy for many years, and when the scarlet fever commenced she was at once seized with frequently recurring fits, which, in spite of the most active measures, ended in fatal coma on the fifth day.

In the *second form* of the disease which I noticed, the symptoms were exceedingly violent and intense from the beginning, and the disease set in with the usual symptoms of severe exanthematous pyrexia, remarkable in the very commencement for the violence of the accompanying headache and spinal pains, and for the great irritability of the stomach and bowels. Indeed one of the very first symptoms in such persons was nausea, vomiting, and bowel complaint. Large quantities of recently secreted bile were thrown up, and the patient passed frequent, at first semifluid and afterwards fluid stools, curdled green or saffron yellow, and evidently composed

of bile suddenly effused into the intestinal canal, with a copious and hurried secretion of mucus from the internal membrane of the bowels, and mixed with some true fecal matter. It was surprising what quantities were thus thrown up, and passed from the bowels by some during the first day or two of the disorder; neither the constant repetition of the nausea and vomiting, nor the abundance of the discharge from the stomach and bowels, in the slightest degree mitigated either the violence of the fever or of the headache, or seemed to prevent the full formation of the eruption. It was curious to observe that this obstinate vomiting and purging was unaccompanied by the slightest epigastric or abdominal tenderness; during its continuance the belly became fallen and soft. In fact its cause was situated not in the belly, but in the brain, a fact I did not perceive until I had had an opportunity of watching the progress of five or six such cases. It depended on cerebral irritation and congestion, and was in nature very similar to the irritability of stomach and bowels which so often accompany, and too frequently mask the progress of, acute hydrocephalus. As soon as I had become aware of the pathological relations of this vomiting and purging, I did not confine my endeavours to check these symptoms to measures intended to act directly on the stomach and bowels, such as effervescing draughts, chalk mixture, stupes, leeches to the epigastrium, &c., &c., I changed my plan of treatment, and turned my attention to the state of the cerebral circulation. Having in a former lecture referred to this topic, and having explained to you the manner in which derangement of the stomach and bowels of a properly gastric origin is to be distinguished from disorder of the digestive apparatus, originating in a sympathetic derangement of function, itself caused by a morbid condition of the brain, and having already pointed out the importance in practice of not confounding these two states, one or other of which is so common in the commencement of violent fevers, phlegmasia, and exanthemata, I shall not at present dwell any longer on this subject. The second form of scarlatina was likewise remarkable for the violent excitation manifested from the very beginning in the circulating system and in the production of animal heat. The pulse at once rose to above 100, it was seldom less than 120, and in many cases, particularly in young people, it ranged from 140 to 150. I have never in any other disease witnessed so many cases of excessively rapid pulse. In general the pulse in this form was regular, but in two cases it became irregular; one was that of a gentleman living in Upper Mount street, whom I attended along with Dr. Marsh; his pulse became intermitting and irregular on the third day, and continued to be more or less thus affected for about a week. This gentleman was attacked with subsultus, delirium, jactitation, and various nervous symptoms, at a very early period, and complained constantly of his throat and head. The former was violently inflamed, and his skin was covered with a bright-red eruption. On the ninth day he was seized with convulsive fits of great violence, and which

returned very frequently during the night; his case appeared utterly hopeless, and yet he perfectly recovered. In a young lady, whose case is detailed by Dr. Nolan, great irregularity and intermission of the pulse commenced about the eighth day, and continued during the state of danger; she also recovered. Of course irregularity of the pulse was in many not so much a symptom of disease as of approaching death, but then the state of the patient could not be mistaken, judging from all the other circumstances of the case. The acceleration of the pulse abated in all when an evident improvement in the general condition took place, but in few did the pulse become quite natural for many days after a favourable change, and in none did it fall to its usual standard in the course of twelve or twenty-four hours, as it not unfrequently does after the crisis of continued fevers; in fact, the scarlatina never ended with a well-defined crisis. As to the temperature of the body, I have already observed that in the cases I am now describing it was from the first considerable, and continued elevated until a very short period before death. Both the pulse and the heat of skin, however, were very easily reduced in energy by the use of the lancet or by the repeated application of leeches, and it was not uncommon to observe that even the judicious use of these means induced a general coldness of surface, very great sinking of the strength, and a faltering state of the pulse. This was remarkably the case in a young lady whom I attended along with Mr. Wilkinson, in Black Rock, and also in one of the family whose cases are related by Dr. Nolan. In both, these effects were very obstinate and alarming, for reaction was not restored until after the lapse of more than twelve hours; both finally recovered. The pulse was sharp but not strong, and resembled the pulse of great irritation rather than that of true inflammation. The most distressing symptom at the commencement of this form of scarlatina was the sore throat; the fauces were violently inflamed, and deglutition consequently much impaired, while a general soreness was felt in the back of the head and neck; urgent headache was complained of by all, and from the second day the eyes became suffused; great restlessness, anxiety, jactitation, moaning, and interrupted raving soon made their appearance, and in many sleep was banished or utterly broken by startings and delirium before three or four days had elapsed. The eruption had now arrived at its height, which it did with great rapidity, dating from the first moment of its appearance, so that the skin, everywhere covered with a scarlet eruption, resembled in appearance the hue of a boiled lobster. In these violent cases the efflorescence was perfectly continuous, and never broken into spots or patches; the skin appeared as if evenly dyed with one uniform colour; the surface of the tongue was likewise much affected with the same exanthematous redness, and soon became foul, and afterwards dry and parched. The sudden drying of the tongue on the fifth or sixth day indicated in this form a rapid aggravation of the disease, and death in several cases was observed

to follow this change in less than twenty-four hours, when this change was, as in a young gentleman Mr. Rumley and I attended in French street, accompanied by a sudden acceleration of the pulse and increase of the jactitation and delirium. In this form the brain and nervous system seemed to be the parts which suffered most, and many became insensible for several hours before death; others had convulsions; when the patient survived the seventh day there was a fair chance of recovery, but many, too many, died on the fourth, fifth, or sixth days.

After I had witnessed a few examples of this form of scarlatina, I consulted with several of my friends and colleagues, and we determined to use the most active measures of depletion in the very first instance that occurred to us. A case was not long wanting. Dr. Marsh and I were engaged in prescribing for some children labouring under the epidemic, in a house in Pembroke street, where our attention was directed to a fine boy, six years old, and hitherto perfectly healthy, who was, while we were paying our visit, attacked with the first symptoms of the complaint; we immediately resolved that as soon as the stage of rigour and collapse which preceded the febrile action had passed, to visit him again and act energetically, if circumstances seemed to permit it. Accordingly we came again in the course of a few hours, and found reaction already established, attended with vomiting, purging, and headache. The sore throat, too, was much complained of, and there was great tenderness of the external fauces. We ordered relays of leeches, eight at a time, to the neck, for the purpose of relieving both the throat and brain, and we administered James's powder and calomel internally. On the next day the skin was burning in spite of a copious loss of blood from the leech-bites, the eruption vivid and already established, the pulse 140, and there had been little or no sleep. Relays of leeches were again ordered, and persevered in until considerable and lasting faintness was produced, and yet no impression seemed to be thereby made on the disease; no abatement of its virulence seemed to be the result, for the raving became more incessant on the second night, and on the third day suffusion of the eye commenced, and the tongue became parched. Shaving of the head, the most industrious application of cold to the scalp, and various other remedies were in vain applied; the pulse became weaker, the breathing quicker, the strength failed rapidly, raving and delirium gave place to insensibility and subsultus, and the patient died on the fifth day. In this case depletion was applied at once and most decidedly, for we blanched and weakened the boy by loss of blood as far as it was possible to venture, and yet the disease was not in the least degree checked, nor the symptoms even mitigated.

A fine boy, thirteen years of age, was attacked in the county of Wicklow, when he was placed under the care of a very judicious practitioner, who did not use either venesection or leeches, but relied chiefly on the exhibition of diaphoretics, particularly antimo-

nials. The boy died on the seventh day, having suffered much from delirium, subsultus, want of sleep, &c. His brother, who was one year older, and a very strong boy, was seized with the disease in Dublin, and placed immediately under my care. I had the advantage of Mr. Rumley's assistance, and we determined to prevent the supervention of the cerebral symptoms if it were possible to do it by means of antiphlogistic treatment; we failed, and our patient died on the sixth day. In short, this form of the disease, where the pulse, without becoming strong, *at once became extremely rapid*, bore venesection badly, and required great caution even in the application of leeches; the nervous symptoms only appeared accelerated by the system of depletion, although the heat of the skin suggested its employment. The derangement of the brain and nerves in this form depended on something more than the violence of the circulation, and originated in something altogether different from mere cerebral inflammation or congestion. What that something was I cannot even conjecture, but it was probably the result of an intense poisoning of the system by the animal miasma of the scarlet fever. Every tissue of the body seemed, if I may use the expression, equally sick, equally overwhelmed, and it is probable that the capillary circulation in every organ was simultaneously deranged. It was not gangrene of the throat which proved fatal, for in this form it never occurred; it was not inflammation of any internal viscus, for such was not found on post-mortem examination of the fatal cases, but it was a general disease of every part. In many, another state of things, which required to be carefully distinguished from that just described, existed, and the disease was evidently attended with an inflammatory state of the constitution, requiring energetic measures. In such cases the symptoms were severe in the commencement, the throat very sore, the efflorescence, however, not quite so sudden or so perfect, and the pulse never near so quick, never excessively rapid, and always strong and distinct. Such bore bleeding and leeching well, and experienced from their use almost immediate alleviation of the sore throat, headache, and restlessness, and were not much weakened by the depletion. It must be confessed that it was often exceedingly difficult to determine, *a priori*, whether the depletory system ought or ought not to be tried; where doubt existed, my custom was to try moderate leeching, and from its effects I judged of the propriety of persevering.

The disease very frequently occurred in *a third form*, more singular still than the two first, and much more insidious in its commencement. This form was evidently very common in the epidemic scarlet fever described by Withering, as cited by Dr. Tweedie. In this form the disease was ushered in by the usual symptoms of pyrexia, together with sore throat, slight headache, and in due time a very moderate and normal eruption. The symptoms continued moderate, the patients, after the first few days, slept tolerably well during the night, had no raving, and were quiet during the day.

About the fourth or fifth day all the febrile symptoms had so far subsided, that a most accurate examination could detect nothing urgent, nothing in the slightest degree either alarming or calculated to excite the least anxiety in the patient's condition. His skin became nearly of the natural standard, his thirst diminished, and the pulse was now scarcely accelerated; a calm nearly complete, in fact, seemed to have followed the first onset of the disease; and on entering the room the physician might easily be deceived, as I myself was more than once, into the pleasing hope that all danger was past, and that perfect recovery might confidently be anticipated. This hope was, in truth, founded on such circumstances as we can usually rely on; for who would prognosticate danger where his little patient, sitting up in bed, and perhaps eating a dry crust with some appetite, had a placid countenance, and had enjoyed a night of tranquil sleep? Regular alvine evacuations, diminution of thirst, sore throat, headache, and fever, together with the normal state of the cutaneous eruption, all conspired to confirm a favourable prognosis; and so matters proceeded, the family dismissing all apprehension as to the result, and the physician most probably discontinuing his attendance about the seventh day, in the belief that all danger was over, and that his interference was no longer necessary. Matters proceeded thus until the eighth or ninth day, when a certain degree of restlessness was observed to occur, and in the morning a slight return of fever might be noticed. Then it was that a peculiar train of symptoms set in. The nostrils assumed a sore and irritated appearance about the edge of the alæ, and a serous moisture began to flow from their internal cavities. Sore throat was again complained of, the skin became hot, great debility and prostration of strength came on suddenly, a painful tumefaction commenced in the region of the parotids and submaxillary glands. This tumefaction increased rapidly, becoming every day harder, more elevated, diffused, and exceedingly tender, but without much redness. In the course of a few days it surrounded the neck like a collar, and being attended with swelling of the face, the poor little patient's countenance was sadly disfigured. In the mean time the discharge from the nose had increased considerably, and become more viscid and fetid; the internal membrane lining the nasal passages was affected throughout, its entire surface everywhere inflamed and tumefied, so that a snuffling sound was produced when the patient breathed through his nose; at length the discharge increased to such a degree, that the nostrils became completely impervious to the air in breathing. The state of the throat generally began to alter for the worse at the very commencement of this change; and a similar inflammation, attended with an ill-conditioned secretion of lymph and fluid, occupied the entire surface of the mouth and tongue, and at last spread deep into the pharynx. While this was going on, the fever freshly lit up at once exhibited the most decided symptoms of the worst form of typhus and subsultus, constant muttering, raving, anxiety, want of sleep,

restlessness, moaning mingled with an occasional screech, reminding one of that which is so ominous in hydrocephalus. Great difficulty was now experienced in swallowing, and the drink was frequently spurted out of the mouth after a vain attempt at deglutition. Matters now proceeded rapidly from bad to worse, and at last, after much suffering, death closed the scene, being preceded for many hours by a state of extreme restlessness, during which it was impossible to determine whether the patient was still sensible. The swelling of the neck went on increasing to the last, but seldom exhibited any tendency to point; it continued, on the contrary, everywhere hard, or, at most, became indistinctly softened, or, to use a technical phrase, "boggy." When cut into, no matter was found; blood, serum, and a diffused cellular slough, not separated from the living tissues, were observed on making the incision.

I shall conclude these remarks on scarlatina, by reading you a letter I received on the subject from Mr. Ferrall. His observations are extremely valuable, more especially those which are made towards the termination of the letter, where he describes a most important sequela of scarlatina not hitherto mentioned by any writer.

"My Dear Sir,—In reply to your letter, I have the pleasure to send you a few brief notes of my experience of the scarlatina of last autumn and winter.

"Of seventeen cases of which I possess notes, four occurred in adults, three in children under four years of age, and the remainder at different ages between the latter and fourteen or fifteen years. I seldom saw the cases in the commencement. The mode of attack was occasionally similar to that of common sore throat, followed by rigors. Sometimes violent pyrexia and shiverings, with intolerable headache, and even delirium, preceded by other signs. In some few cases, the efflorescence first attracted notice, the fever in these instances being throughout so mild as scarcely to demand attention.

"The progress of the disease was various, but usually bore a relation to the character of the incipient fever. In general, the fever increased in intensity as the disease advanced, or as new parts became engaged, but this was not always the case. In two instances which I saw in a state of great vital depression on the third or fourth day, I was assured that the early fever was very high, although it had passed rapidly into the typhoid state.

"The danger sometimes appeared to arise from the condition of the entire system, sometimes from that of important parts. Of two cases which I saw when dying, one was sinking like a person in typhus fever; the other, a boy thirteen years old, was moribund in the coma, which succeeded to violent phrenitic delirium. The latter case was remarkable in this, that the phrenitic state occurred while the eruption was in its prime, the whole body retaining its deep scarlet colour until a short time before his death. The dis-

ease in this instance set in with delirium, which had been subdued, I have reason to believe, by the most active means. Death occurred in one instance from croup, the disease of the throat having passed into the trachea and bronchial tubes. In another, sloughing of the fauces, with low fever, carried off the patient on the sixth day.

"In several, who ultimately recovered, life was seriously endangered by local inflammatory attacks. In one instance, a girl about seven years old, enteritic symptoms sprang up suddenly while the patient was in a very weak state, and were with difficulty subdued. In another, a boy ten years old, acute pain in the region of the heart occurred when the eruption was on the decline; it was accompanied by short cough, palpitations, dyspnoea, rapid though not irregular, pulse, and sudden accession of fever. There was no perceptible *frottement*, but the action of the heart was violent, and there was acute pain on pressure. It yielded to leeching, followed by calomel, with James's powder, till the gums were slightly touched.

"Another patient, a girl twelve years old, narrowly escaped the effects of sloughing of the throat. Croup occurred in two instances, in which, notwithstanding the opinions of M. Troussseau, I could not doubt its origin in scarlatina. It happened, no doubt, in cases which had exhibited the diphtheritic patches, without much surrounding inflammation on the tonsils, but the eruption was sufficiently marked to remove all obscurity. One child, who recovered, ejected the false membrane (which I still preserve) in a tubular form, and presenting a cast of the trachea a little beyond its bifurcation. In the child before mentioned, who died, patches of false membrane were also ejected, but she sank exhausted, and the disease was afterwards discovered to have extended far into the bronchial ramifications.

"Although the treatment was generally antiphlogistic, this plan was not always applicable, even in the commencement of the disease. In all instances which I had an opportunity of observing, it was necessary to watch the effects of local bleeding. It was easy to pass the boundary of relief, and then most difficult to repair the loss, and meet the symptoms of exhaustion when they had actually set in. Wine and diffusible stimuli were often required from this cause alone, even when the cases had nothing of the malignant or typhoid character in their nature.

"Tepid sponging appeared in many instances preferable to cold, and I think the soothing effects were of longer duration. Reaction, and the distressing sense of burning heat, did not appear to recur so soon as when cold fluids were employed. Purgatives, except of the mildest kind, were not well borne, but cooling diuretics were clearly indicated, and when persevered in, had, in many cases, the apparent effect of anticipating the sequelæ of the complaint.

"The ulcerations and sloughings of the throat were treated by nitrate of silver, alum, and the chlorides, according to their states.

But none of these applications were to be depended on, when the colour of the fauces was intensely red, unless a few leeches had been previously applied. In one gentleman, twenty-eight years of age, free leeching, externally, (to the number of forty,) failed in removing the sense of suffocation or enabling him to swallow. A few leeches applied to the inside of the nostrils was followed by copious bleeding and immediate relief. The latter expedient was indicated by the tumid state of the velum and pituitary membrane, the stertorous breathing, and complete occlusion of the nares.

" Its mode of spreading in families was uncertain. It sometimes attacked children within a few days of each other ; at other times, a fortnight has elapsed before I was again requested to see a new patient. Some children escaped the disease altogether.

" Among the sequelæ which I had occasion to see, diarrhoea occurred in two or three instances, chronic bronchitis in one, and anasarca in four. The urine was slightly albuminous in two of the latter cases before the face and limbs began to swell ; in the other two it exhibited this character when the disease was formed, but I did not see them previously. The treatment of the anasarca was antiphlogistic and diuretic, and succeeded in restoring three to perfect health ; the fourth still remains an invalid, but not from this cause ; the apex of the right lung affords evidence of tubercular disease.

" I have now to mention a peculiar affection of the neck, which I have not before seen in connection with scarlatina, but of which four cases have occurred during my observation of the epidemic in question.

" *CASE I.*—About the beginning of August, 1834, I was requested by my friend Dr. Davy to see a young girl, ten years old, in Upper Baggot street. Her convalescence was tedious, some degree of fever still existing at the end of six weeks from the commencement of the attack. But her principal complaint was severe pain of the right side of the neck, close to the head, and extending as high as the vertex on the least motion of the part. She could not raise the head from the pillow without putting a hand at each side for its support, and when taken out of bed, instinctively sought a resting-place for the chin. The face was awry, its vertical diameter passing from above downwards, and from right to left. Posteriorly the upper cervical vertebrae were curved, the convexity of the curve being situated a little to the left of the middle line ; there was considerable swelling of the soft parts covering the bones. Pressure here was intolerable, and the least attempt to rotate the head occasioned severe pain. Deglutition was now tolerably easy, but there had been considerable difficulty of swallowing during the early period of the complaint. There was here obviously a curious state of the articulation of the atlas and dentata, and we did not expect to remove the curvature. Perfect rest was, however, enjoined, and the usual remedies employed with a view to arrest the further progress of the disease. She gradually recovered her

health, and is now lively and well grown, but the curvature is permanent.

“CASE II.—Early in August, 1834, Mary Inglesby, of Russell Place, æt. 7, was sent to me by Mr. Long, of Summer Hill. She was confined to bed in scarlatina for a fortnight. At the end of this time she was taken out of bed, and then the head was observed to be turned to one side. It was now five weeks altogether from the beginning of the disease, and the parts were still in the same state. The face was awry. She complained of pain in the concavity of the curve and that side of the head, and could not bear the slightest motion or shock. Leeches were prescribed, and calomel given afterwards in doses of a grain, three times a day, till the gums were touched. As soon as this effect was produced, the pain subsided, and the head gradually acquired its natural position. Her recovery was complete.

“CASE III.—A younger brother of Mary Inglesby was subsequently under the care of Mr. Long for scarlatina. The same state of the head and neck were detected on the thirteenth day, and treated by Mr. Long on the same plan as that adopted in the former case. The pain disappeared as soon as the mouth was made sore, and the position of the head became natural. He is now in good health.

“CASE IV.—I met Mr. Edgar, of Arran Quay, in February last, in the case of a young gentleman about six years old, whose convalescence from scarlatina was tedious, and in whom the difficulty of swallowing persisted after the redness of the fauces was removed. On taking him out of bed, it was remarked that he was quite unable to keep the head erect. The symptoms were similar to those of the two last cases, but in a milder degree. A few leeches were applied, and evaporating lotions instantly used to the part, on account of considerable local heat. The leeching was repeated in a day or two, but as the symptoms yielded rapidly, and as he had some tendency to diarrhoea, calomel was not employed. In about a fortnight, the natural position of the head and neck was restored.

“I can offer no better explanation of the occurrence of this affection, during the progress of scarlatina, than by supposing that the inflammation of the fauces, and back of the pharynx, was propagated to the covering of the spine, and thence more or less deeply to the adjoining parts. In all those cases there had been marked and prolonged difficulty of deglutition as a symptom of the disease; and it is to this circumstance I am desirous of calling attention, as affording an index for a careful review of the condition of the spine during the period of convalescence. Should a child be observed to lie more on one side than the other, and evince an unwillingness to be disturbed, it would be an additional reason for suspecting a tendency to this complaint.

“Believe me, dear sir,

“Yours, very truly,

JOSEPH M. FERRALL.

“Rutland Square, west, May 30th, 1835.”

## LECTURE XX.

I SHALL speak to-day of some prescriptions which I am in the habit of using in the treatment of fever. In the treatment of fever it is frequently of importance to gain time, and periods will occur in every long fever, in which there may be no direct indication for the exhibition of any powerful remedy; at the same time, such is the ignorance of non-medical persons, and the anxiety of the patient's friends is so intense, that they cannot imagine how it is possible for an attentive physician to let twelve hours pass away without doing something. The mere circumstance of seeing the fever going on, is sufficient proof to them of the necessity of making renewed efforts for its removal. This, however, is very excusable. If any of you happened to be ill, I dare say you could scarcely bear to pass many hours without taking something which you supposed might prove either immediately or remotely useful. Consequently, we could not treat fever in a satisfactory manner without medicines of what may be termed an expectant character, and calculated to fill up the spaces intervening between those periods when active treatment is necessary. You are not to suppose that in ordering such medicines you are acting a dishonest part, and practising a deception unworthy of your profession; on the contrary, your conduct is perfectly just and proper: and though you were convinced that no medicine is required, still it will be necessary to prescribe something, if you do not wish to lose the confidence of the patient and his friends. Again, if at a period when you say that no medicine is necessary, and when the patient has passed twenty-four hours or two days without taking anything, an unexpected turn in his disorder should take place, people will be very apt to say, either that you did not know what to do, or that you took no steps to obviate the threatened change, and that one or two days were completely lost. Conduct like this has frequently brought down a great deal of censure on medical men. It may be said that these are mere prejudices, and above the dignity of a man of firm and consistent character; but when prejudices are intimately blended with human nature, and constitute, as it were, a part of it, it is much better in many cases to submit to them, particularly when compliance does not involve a sacrifice of principle. In cases of acute disease of any considerable duration, and especially in private practice, there are periods when medicines of an expectant and temporising character must be employed, and hence the introduction of a class of remedies extensively used in fever and other complaints, and generally denominated palliatives. These are remedies which have a general tendency to assuage thirst, act as diluents, gently promote the secretions of the skin, intestinal canal, or kidneys, and which are known to possess at least the negative quality of doing no harm. They are most commonly prescribed in com-

bination with a considerable quantity of fluid, and hence are administered either in the form of draught or mixture. The medicine in most general use among the physicians of Dublin is one which was introduced by Dr. Cheyne. It is prepared by dissolving a dram of carbonate of ammonia in three ounces and a half of water, with as much lemon juice as will saturate it; the mixture is then sweetened with syrup of orange peel, and given in doses of two tablespoonfuls every third or fourth hour. In this way a solution of the citrate of ammonia is formed which possesses the properties of a mild anti-febrile, and gently stimulant diaphoretic.

Now it cannot be denied that this mixture answers the purposes of an expectant remedy, calculated to pass away the time, and do no injury; but it appears to labour under one considerable disadvantage—it is not agreeable to the taste. If you taste the citrate or acetate of ammonia, you will find that its flavour is by no means pleasant, and I need not tell you that in cases where there is no actual indication to be fulfilled, it is of importance to have something that will not be disagreeable to the patient. Feeling, therefore, the necessity of altering this prescription, I have lately introduced another which I am happy to find has been extensively adopted, and which is formed by substituting the carbonate of soda for the carbonate of ammonia. The mode in which I generally employ it is the following:— Carbonate of soda, a dram; water, four ounces; lemon juice, a sufficient quantity to saturate the alkali; a syrup of orange peel, half an ounce; tincture of orange peel, two drams. A little more than an ounce of lemon juice will be sufficient to saturate this quantity of carbonate of soda, whereas it would take from two and a half to three ounces to saturate the same quantity of carbonate of ammonia. If you wish to have a weaker solution, and I believe it is the better way, you can dissolve a dram of carbonate of soda in five ounces of water instead of four. Nothing can be more agreeable in flavour than this mixture. The citrate of soda which is formed, does not, it is true, exert any active influence on the animal economy, but it partakes in the properties of neutral salts, determines gently to the kidneys, tends to keep up a soluble state of the bowels, and forms a most grateful and refreshing beverage. The syrup of orange peel gives the mixture an extremely pleasant flavour, and this is further heightened by the agreeable aromatic bitter of the tincture. Since I commenced using it, I have found it to answer all the necessary purposes extremely well, and I can recommend it to you with confidence.

I shall now speak of the principles which guided me in prescribing for a young woman in the chronic ward, named Catharine Roach. I am anxious to make a few observations also on her case, as it belongs to that anomalous and frequently unmanageable class of female complaints, which puzzle the practitioner so much, and which he is so often called on to treat. The most prominent feature in the case of this young woman, who is of stout make, considerable embonpoint, and rather healthy appearance, is reten-

tion of urine. Retention of urine occurs much more frequently in young and tolerably healthy females than in males at the same period of life. It is very rare to meet with retention of urine in males under thirty, except in cases of fever, or disease of the urinary passages; in a healthy person, and who is going about in the usual way, it is never observed. This, however, is not the case with females; young females, apparently in good health, and going about as usual, not unfrequently suffer from retention of urine.

The history of this girl's case is briefly as follows. About twelve months ago she was treated in Mercer's Hospital for fever, during which she laboured under retention of urine; this disappeared with the return of convalescence, but after some time it again attacked her, and has appeared at intervals ever since, being sometimes absent for weeks, and sometimes only for a few days. You perceive, then, it is quite evident from the history of the disease, from the circumstances of its being unaccompanied by any local inflammation or change in the part affected, and from its occurring during the course of fever in which the brain, spinal marrow, and other parts of the nervous system were engaged, that the retention of urine must here depend solely on a nervous cause. It is, in fact, a species of temporary paralysis of the bladder, arising from the nervous influence by which the motions of that organ are regulated, being subjected to occasional disturbance. This affection of the bladder is of frequent occurrence among hysterical females, and is sometimes met with in persons who appear to have no other disease. It is also very apt to continue for a long time; I have seen it last for months, and require the daily use of the catheter.

In this case the origin of the disease did not appear to have any connection with the discharge of the uterine functions, the cata menia were regular, and there was nothing connected with the state of the uterus on which it could be supposed to depend. But on inquiring carefully into the history of her complaint, we found that ever since she had laboured under fever, she had experienced a train of symptoms indicating that the derangement of the nervous system which then occurred had never completely subsided; she complained of pain in the head and loins, want of appetite, constipation, and tympanitis; symptoms which all indicated that a considerable degree of nervous derangement still existed—in other words, that the affection of the nervous system which accompanied her fever had now become, as it were, chronic, and with the chronicity, had assumed the intermittent character of nervous diseases.

I shall now explain briefly the mode in which I treated this case, and the reasons which induced me to prescribe the remedies employed. In the first place, it was necessary to remove and obviate constipation. My object here was not merely to keep the bowels open, but also to give such medicines as would agree with the stomach and lessen the tendency to tympanitis. Now if, in addition to these purposes, I could accomplish another very important object,

namely, to strengthen the tone of the nervous system, and effect an alteration in its mode of action, I considered that I should fulfill all the required general indications. I therefore ordered an electuary, which I have been much in the habit of using in similar cases, and from which I have often derived remarkable advantage.

R Electuarii sennæ, 3ij.

Bitartratis potassæ  
Sulphuris loti      }  
Carbonatis ferri    }  
Syrupi zingiberis, q. s.

Ut fiat electuarium. Sit dosis cochleare minimum ter quotidie.

I am sure every gentleman present understands the principles on which each ingredient of the foregoing combination was prescribed. The electuary of senna, or, as it is usually termed, the lenitive electuary, by its mild but extensive operation on the digestive tube, forms an excellent basis for a combination like this. The carbonate of iron was ordered, because it was obvious that the young woman laboured under considerable derangement of the nervous system, requiring the salutary influence of a tonic calculated to strengthen the nerves, and thus gradually restore them to their healthy and normal action. Besides, we know that in cases where persons labour under a relaxed and debilitated state of the digestive organs, giving rise to tympanitis, constipation, and want of appetite, the carbonate of iron, by giving additional vital energy to the intestinal tube, tends not only to restore appetite, but also to check tympanitis and promote defecation. You perceive, then, what my motives were in giving the carbonate of iron; but as, in such cases, there is always more or less irritation and excitement of the nerves, it will be necessary to temper the action of the carbonate of iron, lest, by proving too stimulating, it may do more harm than good. I combined, therefore, with it a neutral salt of aperient and cooling properties, the supertartrate of potash. It might be objected here, that an error was committed in prescribing remedies which are chemically incompatible, and that so far the combination was imperfect; but it may be observed, that the supertartrate of potash is soluble with difficulty; and, besides, even supposing that decomposition actually does take place, and that we have a tartrate of iron and a carbonate of potash formed, still we know that the tartrate of iron is an excellent chalybeate, and experience teaches us that the new combination forms an active and valuable remedy. To these ingredients we added sulphur, to act on the skin and the mucous surfaces of the lungs and digestive tube. You will recollect that this girl had frequent attacks of tympanitis, which consists in an effusion of air into the intestines, produced by a frequently recurring congested state of the bowels. Now, strange as it may appear, sulphur, though apt to induce a secretion of sulphurated hydrogen from the intestinal mucous membrane, and thus give rise to flatulence, exercises by its gently stimulating and

alterative effects a remarkable influence over morbid secretions of air from the bowels, and so far the homœopathic doctrines seems to be borne out. It certainly appears singular that sulphur, which is a stimulant, and which generally increases the gaseous secretions of the digestive canal, should have a tendency to remove congestion and diminish flatulence; but I appeal to experience and analogy for the truth of this opinion, and refer to its use in another form of disease where congestion and flatulence is always present, namely, in cases of hemorrhoids. So much for the reasons which led me to prescribe this combination.

In ordering this electuary you should give directions (and this is a point never to be neglected in treating female complaints) to the patient to attend carefully to the effect of the remedy. If a tea-spoonful three times a day is sufficient to keep up a gentle but full action of the bowels, there will be no necessity of changing the dose; but if this is not enough, it should be increased, or it may be quickened by the addition of a small quantity of jalap or electuary of scammony. This, however, should be done cautiously, because in such cases your object is not to purge briskly, but merely to maintain a soluble state of the bowels. When the use of this electuary has been persevered in for some time, and when the patient takes it regularly, and knows the exact quantity necessary to produce one or two loose evacuations in the day, it is surprising how favourably it will act. It regulates the bowels, invigorates the tone of the intestinal mucous membrane, increases the appetite, improves the strength, and restores the healthy action of the nervous system. In the case before us it has proved eminently serviceable.

So far with respect to our attempts to act on the system generally; a few words now with respect to the local treatment. In the first place, with the view of strengthening the tone of the bladder, and promoting the expulsion of urine, we gave fifteen drops of the muriated tincture of iron (liquor muriatis ferri p. d.), in an ounce of camphor mixture three times a day. The reason for prescribing the muriated tincture of iron is so obvious, and it has been so frequently employed for similar purposes, that it is unnecessary to say anything in the way of explanation. In addition to this, I ordered a large vessel of cold water to be poured over her back and loins every day. This practice has often proved very beneficial to nervous females; it has in many cases restored the power of the bladder and improved the functions of the uterus; it also exercises a remarkable influence over the digestive system, and, like sea bathing, is an excellent remedy for constipation. In order to insure its full effect, you should order the patient to place her feet in warm water, and have the cold water poured from a considerable height. Like many other remedies of a similar kind, it is difficult to explain its action, but experience has shown that it is extremely valuable. We next prescribed such remedies as contribute to promote the secretion and evacuation of the urine, and, lastly, we have given a

combination of tonics and stimulants. To-day I have ordered the following draught, to be taken twice daily :—

R Decocti foliorum buchu,  $\frac{3}{2}$ j.  
 Tincturæ ejusdem,  $\frac{3}{2}$ ss.  
 Spiritus ætheris nitrosi,  $\frac{3}{2}$ ss.  
 Tincturæ cantharidis,  $\frac{1}{2}$ ij.  
 Fiat haustus.

I need not tell you, gentlemen, what the properties of buchu are: it is gently stimulant, sudorific and diuretic; it acts as a tonic on the urinary system, and in chronic affections of the bladder has proved extremely useful. Of the sweet spirit of nitre it is unnecessary for me to say anything, but a few remarks on the action of cantharides may not be improper. Being convinced that in this case the retention depended chiefly on temporary paralysis of those muscular fibres by means of which the bladder is enabled to evacuate its contents, it became necessary not only to act on the general system, but also on the parts affected, and we know from experience that cantharides exert a stimulant effect on the whole urinary apparatus. The tincture of cantharides, however, should be given with caution, and only in small doses, as it is apt to stimulate too powerfully if prescribed in large quantities. I should, however, have no objection that it increased in this case the pain which the patient experiences in passing water, as it is necessary to have some symptoms present indicating its action on the bladder. A small quantity, however, is generally sufficient in all cases of this description, and I have seen very good effects from doses of two drops three times a day.

While I am on this subject, permit me to speak briefly on an opposite state of the bladder, which is frequently observed in very young persons. A boy, perfectly healthy, but of a nervous temperament, studious, and extremely anxious about his lessons, is subject from his infancy to pass his water under him in bed. He is, suppose, arrived at the age of six or seven years, and has no disease; but still this habit sticks to him, and cannot be removed. The irritability of his disposition has been increased by injudicious correction; he has been taken up at night and whipped; he has been ridiculed during the day; his infirmity has been made known to his companions, who call him nicknames; and in this way the habit has been rather confirmed than removed. Now you may happen to be consulted about such a case, and be asked whether it can be relieved or not. The matter appears, perhaps, trifling and ridiculous, but you may get more credit by curing a bad habit of this kind, than by removing an acute disease. Now what are you to do? In the first place, you must remove the boy entirely from all companions of his own age, who are acquainted with his bodily infirmity. In the next place, you must not allow him to be corrected or reproached, and you must adopt every moral means to diminish general irritability. The boy should not be too much

confined; he should not be allowed to apply too closely to his lessons; and he should have generous diet, good air, and sea bathing. On these general principles I have cured several very obstinate cases with the use of infusion of buchu, with tincture of cantharides, in small doses. With respect to the use of cantharides, it struck me that the same medicine which would have the properties of stimulating in large doses, might, when given in small quantities, have the property of increasing the tone of the bladder, and perhaps altering its mode of action; nor in this expectation have I been disappointed. In a number of the *Dublin Medical and Chemical Journal*, I have spoken of a remedy which appears to be adapted to such cases, namely, the *Lycopodium clavatum*, which grows on the Dublin mountains, and which is said to have stimulant and diuretic properties analogous to those of the *Diosma crenata* and *Arbutus uva ursi*. It appears to be a remedy well adapted to cases where there is a chronic irritability of the bladder; and it is stated by some German writers that it has produced very good effects in many chronic catarrhal affections of the bladder. I have not, however, time to speak of its properties at present, and beg leave to refer you to the paper in which I have spoken of it, which you will find in one of the late numbers of the *Dublin Medical and Chemical Journal*.

A woman, named Anne Scarlet, was admitted on Saturday, concerning whose case it may be necessary to make a few observations. She states that she has been ill for the last eight days, and that her illness originated in cold, preceded by rigors, and followed by feverish symptoms. The general pyrexia had subsided at the period of her admission; but she had some symptoms worthy of attention. Her pulse was 72, and regular; her skin rather cool, and her bowels natural; but she complained of acute pain in the left side, which, she said, came now and then, catching her breath, and preventing her from taking a full inspiration. This pain was so intense, and seemed to affect respiration so considerably, that, looking to its situation and its effects, you would at first sight be inclined to think that it arose either from pleurisy or pericarditis. On examining the chest, however, by the stethoscope and percussion, we found the sound was clear and normal: there were no râles present, and the respiratory murmur was heard distinctly over the whole lung. In fact, auscultation showed that the cause of the pain was not connected with pleuritis, pneumonia, or pericarditis. What then was it? A variety of pleurodynia, well worthy of your attention, as being connected in her case with retention of the milk and engorgement of the left mamma. At the time she was attacked with cold, she happened to be only a few days after childbirth: the feverishness which ensued obliged her to give up nursing, and in this way a sudden and unnatural check was put upon the secretion of milk. When an occurrence of this kind takes place, and proper means are not taken to obviate the mischief, a high degree of local irritation is the consequence, pro-

ducing inflammation of one or both the mammae, which, if not treated well and energetically, will certainly end in mammary abscess.

What I wish to draw your attention to, however, at present, is this — that inflammation of the mamma, arising from retention of milk, is very apt to be attended with pleurodynia in one or more parts of the chest. The flow of milk to the breasts, three or four days after delivery, is very often accompanied by flying pleurodynia, and the formation of mammary inflammation, from the arrest of the lacteal secretion, is also very frequently attended with fixed pains of a pleuritic character.

The treatment adopted in this case was very simple. In the first place, you endeavour to check the determination of fluid to the breast; and for this purpose you exhibit a purgative of an hydragogue kind, calculated to act briskly on the bowels. We gave a combination of infusion of senna, sulphate of magnesia, tincture of senna, and electuary of scammony, which acted six or seven times on the bowels, and tended materially to relieve, by derivation, the mammary congestion. In the next place, we directed our attention to the breast, and endeavoured to remove the milk, by the use of the syringe employed for that purpose. The milk may be removed from the breast by means of the syringe, or by sucking with a breast-bottle, and where the tenderness of the part is so great that neither of these modes can be employed, the next best means is diligent fomentation. This produces a constant oozing from the breast, and if the fomentation employed be made with a decoction of poppy heads, it has considerable effect in abating pain and inflammation. We also applied leeches in this case, not with the view of removing the pleurodynia, but with the intention of removing its cause — mammary inflammation. By the use of means directed to the breast, you will find that we can remove all symptoms of pleurodynia, and that the pain and difficulty of breathing will soon disappear. This is a simple case, but it is one of frequent occurrence, and it requires some tact and management for its successful treatment.

To-morrow I shall speak on some other matters connected with the treatment of fever, and shall give some extracts from a pamphlet on the medical effects of the chlorides of lime and soda, published some time ago by the Archbishop of Cashel, an erudite scholar, an accurate chemist, and an excellent man. You have frequently, since the commencement of the present epidemic, seen me use the chloride of soda in the treatment of fever with the best effects. Indeed, we have much cause to congratulate ourselves on the happy results of our fever treatment. Since the commencement of the session, there has been a vast number of cases in the hospital, some mild, but many very doubtful and dangerous; yet we have not, as yet, lost a single patient. This is a circumstance well calculated to excite agreeable reflections. It is also pleasant to recollect how plain and simple our mode of treatment has been.

You have probably observed that, in the treatment of all the cases that came before me, I have not prescribed altogether a dozen grains of calomel; that I have very seldom ordered any kind of purgative medicine; that I have been sparing in the use of leeches and cupping, and that I have not ordered a single patient to be bled. This I am sure will appear strange to the various sects of pathologists and theorists whom I have seen, like so many waves succeeding each other, and whose doctrines were equally doomed to break on the solid and immovable shore of truth. I recollect how each doctrine arose, and made converts, and influenced practice; how each had its day, and then sank into that obscurity and neglect to which vain and profitless speculations are always destined. I recollect when it was the custom to commence the treatment of fever, by prescribing ten grains of calomel, to be followed by a bolus containing fifteen grains of jalap, or by a large draught composed of infusion of senna, epsom salts, and electuary of scammony. I remember the time when it was the fashion to bleed every case of fever which came into hospital, no matter what the stage of the disease might be, or what the condition of the patient was, at the time of admission. I recollect, too, when the prostration and weakness which accompanies local inflammation, particularly of the digestive system, used to be treated with wine and stimulants. In fact, so great was the difference of opinion among medical authorities, and so discordant was the practice employed, that an able and honest man declared, in a pamphlet published about sixteen years ago, that the treatment of fever was nothing but a farce, and that as many would recover under one form of treatment as under another; or, in other words, that as many persons were killed by one form of treatment as by another. This appalling announcement of the truth met the public eye, and it was further confirmed by observing that the poor, particularly those located in remote country districts, who had little or no medical attendance, died in much fewer numbers than the rich, who lived in towns or in their vicinity, and who had every attention paid them which professional skill could devise. Various explanations of this dreadful fact were given; and among the hallucinations of the day was the statement, that a poor wretched being, who lived on bad food, who ate nothing but potatoes and milk, or probably salt, and who was addicted to habits of intoxication, was better calculated to bear fever than the man who lived well and led a regular life. The truth, however, is, that the rich were killed by the *nimia diligentia medicorum*, and the poor, who had nothing to look to (to use a quaint expression of Dr. Rutty) but the providence of God, escaped. It is certainly an undeniable fact, that those who had plenty of medical attention, and took a great quantity of medicine, frequently died; while those who had no attendance, and took scarcely anything but water, generally recovered. Any observant practical physician, who is in the habit of treating fever, knows that there is no single principle on which it can be treated

successfully. Every epidemic is peculiar and distinct in its nature, and each consequently requires a distinct and peculiar mode of treatment. Hence the necessity of studying fever unbiassed by any preconceived notions, and independent of the trammels of dogmatism. With a person who observes in this way, who studies the disease as it is, and not as it is described ; whose practice is regulated, not by the doctrines of the schools, but by the results of investigation, carefully weighed and considered ; with such a person, the treatment of fever will be simple and successful, and I believe that there is no disease in which success so much depends on treatment as fever. It is difficult to explain how it came to pass that a contrary opinion could be promulgated in Dublin. Something must be attributed to the neglect or incapacity of those whose duty it was to teach the truth. The chief cause may, however, be traced to the activity and zeal which inspired some, not only to uphold their own branch of the profession, but to decry, I had almost said to defame, that which they were pleased to call *pure medicine*. With characteristic inconsistency, however, these gentlemen, who declared that the treatment of fever was at best useless, readily engaged in its management in private practice, and while they professed openly their disbelief in the efficacy of any medicines, they busily employed themselves in prescribing pills and draughts without number for their own fever patients. That they thought their treatment of some value, might be gathered from their acceptance, their invariable acceptance of pecuniary remuneration from the sufferers' grateful friends, who little dreamed the while that the hands which, with automatic movement, so readily grasped their fees, belonged to persons who held, nay, who maintained, the opinion that the treatment of fever was all a farce. Posterity will scarcely give credence to this fact, and will probably refuse to believe that such an opinion could have been advanced in what we are pleased to call an enlightened age, and an enlightened city. They will scarcely think I speak the truth in assuring them that a spirit of medical intolerance existed to such a degree at the time of the discovery of the stethoscope, that whoever in Dublin actively occupied himself in verifying the researches of the immortal Laennec — whoever availed himself of the new resources invented by this great physician, was sure to become an object, not merely of dislike, but of animadversion and ridicule, on the part of those who ought to have exerted their influence in endeavouring to advance, and not retard, the progress of science. Happily for the character of the country, their endeavours have been frustrated, and the cause of truth has triumphed. Happily for the students and their future patients, those teachers are now most followed, who best explain, and most diligently illustrate, the phenomena observed by means of mediate auscultation.

## LECTURE XXI.

I SHALL refer briefly to some points connected with the case of an old man in the chronic ward, who died lately of inflammation of the lung. At the period of his admission, he had been ill for some time; both sides of the chest, but particularly the left, sounded dull on percussion; he had extensive bronchial respiration, and crachêt rouille, in fact, it was a very bad case of double pneumonia, a disease which at his time of life is very seldom cured. We did all we could to arrest the progress of the disease; we cupped him over the left side, gave him mercury so as to affect his system, and applied blisters to both sides of the chest, anteriorly and posteriorly. These were the only active measures which remained for us to employ; from the man's age, the weakness of his pulse, and the duration of the disease, we could not venture on general bleeding; we could only attack the disease with local depletion, mercury, and counter-irritation. All these remedies were applied with great diligence, but unfortunately proved incapable of checking the disease. His cough continued, respiration became more difficult, and though his mouth became affected, the dulness on percussion increased day after day; and though the patient was removed into a warmer room, and every attention paid to his comfort, it was evident that he was getting gradually worse. About a fortnight after his admission, his expectoration assumed the purulent character, and it was obvious that the lung had passed from the stage of hepatisation into that of interstitial suppuration. He took the decoction of polygala, with Iceland moss and syrup of white poppies, but without any relief to his symptoms; the disease increased, and he died on the nineteenth, sixteen days from the date of his admission.

On examining the lung, the ordinary phenomena of pneumonic inflammation were discovered; parts of the lung were in the state of gray hepatisation, others were infiltrated with pus, and broke down easily under the finger. We found, too, that he had not only pneumonia, but also extensive pleuritis and pericarditis. The pleurisy had probably commenced about eight or nine days before his death; the pericarditis was of an origin somewhat more recent.

You may ask why I did not recognise these affections before death. The reason is twofold. The man was in a very weak and hopeless condition, and both sides of his chest were sore from the blisters; these are circumstances under which I have strong objections to torment a patient with examinations, and therefore I made none in this case. The other reason is, that in a patient who has been greatly reduced by some acute disease, new inflammations are apt to spring up with great rapidity, and with still greater latency. I remember a very remarkable case of the same description which occurred at the Meath Hospital, where the patient had a very extensive inflammation of the pleura with exudation of lymph

and effusion of a considerable quantity of fluid, and yet not one of these symptoms were recognised during life. This man, you will recollect, never complained of pain in the side, nor had he orthopnæa, irregularity of pulse, lividity of countenance, or any of those symptoms which are looked upon as indicative of pericardial inflammation, yet on dissection we find the pleura extensively engaged, lymph exuded on its surface, and a small quantity of sero-purulent effusion in its cavity ; and on examining the heart, we find the pericardium covered internally with an extensive gelatinous layer, consisting of lymph and puriform fluid intimately mixed together. You perceive, then, in this case, a confirmation of what I have so often insisted on, that pleuritis may occasionally run through its course, unaccompanied by pain in the side, and that inflammation of the pericardium may exist without orthopnæa, irregularity of pulse, lividity of countenance, or fainting, symptoms formerly believed to be more or less manifest in every case of pericarditis. The pathology of pericarditis has been investigated but lately with the care it deserves : the labours of our French brethren have been mainly instrumental in producing its present degree of advancement. In England some valuable observations have been contributed by Dr. Elliotson and others, but they have been more than rivalled by the contributions to the diagnosis of this disease which have appeared in the *Dublin Journal of Medicine and Surgery*. The French, indeed, have afforded the strongest evidence of the high value they attach to the essay of Dr. Stokes on the subject of pericarditis, by the transference of his entire article to the pages of the *Archives Générales de Médecine*. A most masterly paper, by Mr. Mayne, in the twentieth number of the *Dublin Journal*, ought to be consulted by every one anxious to make himself master of this important subject. Indeed I have no hesitation in asserting that Mr. Mayne's paper will be found capable of bearing a comparison with anything yet written on the symptoms of pericarditis ; compare it, for instance, gentlemen, with the article *Pericarditis*, by Dr. Hope, in the *Cyclopædia of Practical Medicine*, and you will at once perceive the very great inferiority of the latter ; compare it and Dr. Stokes's paper with the reports of clinical lectures delivered in London on cases of pericarditis, and you will agree with me in thinking that the writings of our countrymen yield not in merit to those of the metropolitan professors. Gentlemen, I speak not in the spirit of vanity ; I do not bring these matters forward in order to flatter and augment a feeling of medical nationality ; far be it from me to extol beyond their deserts the merits of Irish writers, still farther from me the wish to depreciate the labours of English authors. Let us emulate our neighbours in the spirit of honest rivalry, and not imitate the example of some London lecturers and Scottish reviewers, who — but I have done, fearing that the narrow-minded prejudices of an editor in Edinburgh, or of a few teachers in London, should induce me to forget the favourable, the too flattering reception, which everything of

merit issuing from the press of Ireland has met with from the medical periodicals of England.

To return to our subject. Pericarditis is a disease of quite as frequent occurrence as pleurisy, and often, as in the present instance, associated with the latter; on the whole, I do not consider pericarditis as more dangerous or more difficult to cure than pleuritic inflammation, neither does its existence seem less easily ascertained. Some cases, it is true, are extremely insidious in their nature, but the same may be said of cerebritis, pneumonia, and all other phlegmasiae; usually, however, a careful and attentive physician will at once detect the existence of pericardial inflammation. When he finds that a patient has been exposed to causes capable of exciting fever, that he has been liable to gout or rheumatism, or has been actually attacked with either, then will his attention be directed to the heart; if he perceives that its action is either unusually violent or irregular, or if he observes that uneasiness and oppression of chest are complained of to a degree not to be accounted for by any pulmonary lesion present; if he finds that his patient has the appearance of a person labouring under some serious disease, and that none such exists in the lungs themselves, then will he be called on to examine the region of the heart with the greatest accuracy. One of the most common symptoms of pericarditis is tenderness in the intercostal spaces over or near the heart. This is not perceived in many cases until pressure is made with the fingers. Tenderness occurs in many who do not complain of pain or stitch in this portion of the chest; when the latter co-exists with tenderness, the presumption in favour of the presence of pericarditis is still greater. The pain and uneasiness about the heart, are, as Dr. Elliotson remarks, generally increased by pressing in the left hypochondrium upwards towards the diaphragm. I must refer you to Dr. Stokes's and Mr. Mayne's papers for any analysis of the physical signs derived from percussion and auscultation, and also for an explanation of the reasons why the general symptoms are subject to such striking variations in this disease. In some you have, soon after its commencement, lividity, orthopnoea, and tendency to fainting combined with irregularity of pulse; in others the disease runs its whole course, whether it terminates fatally or in health, without any of these symptoms; in fact, no disease is more inconstant in its characters, and none more requires the aid of investigation by means of physical signs, which, if well conducted, seldom fails to clear up all doubts. Of one thing I am certain, that inflammation of the pericardium in a person of tolerably good constitution may be generally arrested in its progress by bleeding, frequent leeching, and scrupulous doses of calomel. It is mere trifling on such occasions to have recourse to tartar emetic, digitalis, or the common antiphlogistic remedies. Instantly use every effort to produce the full action of mercury on the system. Apply the ointment to the axillæ; smear it over the inside of the thighs; make your patient respire the vapour of *hydrargyrum cum creid* as often in the day

as he can bear the process, and be assured that you are pursuing the proper course. Well has it been observed by Dr. Elliotson, when speaking of a fatal case of pericarditis,—“ The only chance I had to save the life of this person would have been to have pushed the mercury further. I am quite sure that more lives are saved in inflammatory diseases by carrying mercury to a great extent, than by merely having recourse to it for the simple production of ptyalism.” It is the want of decision in the practice of the French physicians—it is to their want of confidence in mercury, that we must attribute the greater mortality of pericarditis in Paris than in Dublin; for most of our patients recover, most of theirs die.\* Of course, gentlemen, the most unfavourable of all cases is where pericarditis attacks a person debilitated by previous sickness, such as fever, dropsy, &c. Here the disease runs a very rapid, and too often a fatal, course, and cannot be controlled. One practical remark, and I have done. Before effusion takes place into the pericardial sac never apply a blister; after it has occurred, repeated and severe blistering over and about the region of the heart is one of our best remedies.

Two years ago I had an opportunity of studying a case which subsequently proved to be an example of inflammation of the muscular substance of the ventricles, ending in suppuration and the formation of a large abscess in the ventricular parietes. This is a very rare occurrence, for the simple reason, that inflammation of the substance of the heart generally proves fatal before pus is formed. A very robust gentleman, aged fifty-five, from the neighbourhood of Wicklow, came to Dublin for the benefit of advice. He had complained of cough for many months, together with dyspnoea and palpitation of the heart; latterly, he had become anasarcaous, and suffered much from distress and pain referred to the region of the heart. This pain formed the chief subject of his complaint, and darted over the chest. On examination, I immediately detected hypertrophy and dilatation of both ventricles, and I announced the existence of valvular disease, inasmuch as a loud and extensive *bruit de soufflet* existed, together with a remarkable *frémissement cataire*, and a very irregular pulse. This opinion was delivered in the presence of Dr. Sherwood and Mr. Hetherington. Our patient returned to the country, where he continued to complain of pain in the heart that was at times excruciating. He died suddenly at the end of a few weeks. The results of the post-mortem examination were kindly communicated to me by Dr. Sherwood. Considerable dropsical effusion into both pleural cavities; heart exceedingly enlarged. “On splitting open the pericardium, I found (says Dr. Sherwood) that the heart adhered to its entire surface by means of bands of coagulable lymph, which were

\* [A complete error; in all countries the disease is rarely fatal, and in France it was first ascertained by Dr. Louis that it generally terminated favourably.—*Ed.*]

easily broken down except at the apex of the heart, where they were very strong and firm. In attempting to break them, more than two ounces of purulent matter escaped into the cavity of the pericardium, which caused me to institute a very close examination of the parts, in order to discover whence the pus came. I found a small rent in the apex of the heart, immediately below the floor of the left ventricle, exactly in the situation of the firm adhesions before spoken of. On enlarging this opening, I discovered a cavity in the substance of the heart, with a regularly-defined wall capable of containing more than two ounces of fluid. The walls of both ventricles were enormously thickened; all the valves were more or less affected; but the chief disease lay in the semilunar valves of the aorta, which were nearly altogether ossified."

This case was extremely remarkable, and exhibits an example not merely of the dropsy and dyspncea which so usually attend hypertrophy and valvular disease of the heart, but also of a combination of chronic pericarditis and chronic inflammation of the muscular substance of the ventricles, *ending in the very rare termination, abscess.*

Having made these observations, I shall next call your attention to the disease of Francis Thorpe, which is important both in itself and from the circumstance of such cases being frequently met with. This lad, who was much exposed to the weather, being an outside servant, was attacked about six months ago with cold, followed by hoarseness and sore throat, with cough, then slight, but at present rather troublesome. A certain degree of rawness about the fauces was observed soon after the attack, and latterly the submaxillary glands have become slightly enlarged. On looking into the throat, the velum and fauces appear redder than natural, the amygdalæ are swollen, and the mucous membrane covering the back and sides of the pharynx is dry, and covered with irregular superficial excoriations. The hoarseness still continues, and he can only speak in whispers. His general health, however, does not seem in any degree impaired; he has no fever, his appetite is good, and his sleep natural.

This case, however, is one which demands particular attention. A boy is attacked with cold, he gets slight local inflammation of the fauces and larynx; this produces cough and hoarseness, which go on for months rather increasing than diminishing, and his symptoms finally assume a chronic and intractable character. Still he does not fall away in flesh, has no symptom of hectic, and, on examining his chest, you cannot find any evidence of the existence of tubercles. In making the prognosis in such a case, you should always act with great caution. Though an examination of the chest should detect no distinct sign of tubercles, and a review of the state of the constitution should satisfy you that there was no fever, night sweats, or wasting of flesh, yet the obstinacy and persistence of the inflammatory condition of the larynx and fauces would seem to show that the affection, though not decidedly of the

scrofulous character, was still more analogous to it, and might end in phthisis. You should not be so sanguine as to anticipate a certain cure, because the cough and laryngeal symptoms are unaccompanied by fever, or by stethoscopic phenomena indicating the approach of phthisis. The disease, by fixing itself in the larynx, and keeping up a constant irritation in the neighbourhood of the lungs, would probably, after some time, (if exacerbated by fresh colds and confirmed by neglect,) give rise to tubercular development.

Allow me to allude here briefly to a form of chronic laryngeal inflammation which has been described under the name of phthisis laryngea. Of this disease there are two varieties. In one case the hoarseness and sore throat follow the development of tubercles in the lung; in the other they precede it. Consumptive persons very frequently get, shortly after the occurrence of scrofulous inflammation of the lungs, sore throat, hoarseness, and laryngeal cough. But this is different from the hoarseness and cough which precede phthisis. In the former, the laryngeal symptoms are secondary, and form only a part of the general disease; in the latter, they constitute the first link in the chain of morbid action. The former take place only in a constitution decidedly scrofulous; the latter occur most commonly in constitutions which have been impaired by various debilitating causes, and thereby rendered analogous to, or identical with, the scrofulous. One disease, however, explains the other, for it is clear that if a certain state of the constitution is capable of occasioning scrofulous inflammation of the lungs and tubercular development in the pulmonary tissue, in the first instance, and laryngeal disease in the second, it is clear, I say, that the order of succession may be very easily inverted, and that, in such a constitution, the accidental circumstance of a cold falling on the larynx may determine the appearance of disease in that part long before the lungs become engaged. Hence, whenever you are called on to treat a case of chronic laryngitis, where the disease has lasted for any length of time, and where the patient's system has been impaired by any debilitating cause, or where you have any reason so suspect that he is of a strumous diathesis, your prognosis should be always guarded.

You should not, however, give up the case at once, particularly if an examination of the chest assures you that there is no scrofulous deposition going on in the lung. In the first place, endeavour to remove the inflammation of the throat, if possible; by doing this, you will accomplish a vast deal; and in the next you should direct all your efforts towards improving the state of the constitution, for in this way you make the greatest progress in checking the tendency of the individual to scrofula. If there be much tenderness of the larynx on pressure, as you can easily ascertain by placing your finger and thumb on each side of the thyroid cartilage, pressing the larynx backwards, and moving it from side to side, you should commence with the local detraction of blood. A small

number of leeches should be applied to the throat every second or third night, and this should be continued for a week or a fortnight. If there be no tenderness of any amount, and the patient can bear pressure freely, there is no necessity of applying leeches. Your means must then be confined to those remedies which act immediately on the diseased mucous surface, and for this purpose, one of the best applications is a solution of nitrate of silver, ten grains to the ounce, or a solution of the sulphate of copper, in the same proportions. The best mode of applying it is to take a probang, or a small piece of sponge, fastened to the end of a quill, dip it in the solution, and having slightly squeezed it to prevent the fluid from dropping, touch the excoriated and red parts of the fauces as far as you can conveniently go, rather by pressing the sponge gently against the inflamed mucous membrane than by rubbing. It will be essentially necessary to touch every portion of the diseased surface of the pharynx, for if any part be omitted, it will have the effect of keeping up the disease. You perceive the object here is to change the action of the mucous membrane. By acting powerfully in this way on the mucous membrane covering the pharynx, fauces, and entrance of the larynx, you will often succeed in bringing on a healthy action, which spreads to the parts in the vicinity. Of this we have an illustration, afforded by the results of treatment in chronic disease of the skin, where local applications to a particular part not only cure that part, but also extend their influence to a considerable distance on every side. It is the same with respect to irritation or inflammation of the lower part of the digestive tube; the use of astringent injections, which can only affect the lower part of the rectum, is often found of essential service in relieving dysenteric affections of the colon.

In addition to the use of the nitrate of silver, we have employed a remedy in this boy's case which has been found beneficial in several instances where no sign of pulmonary irritation is present — I allude to the use of iodine inhalations. This was also intended to make a still further change in the condition of the diseased mucous membrane. It is made by putting from five to ten drops of the tincture of iodine with half a dram of tincture of conium, and four ounces of hot water, into an inhaler, and making the patient draw the vapour into his throat for about ten minutes, every night and morning. This form of inhalation proved extremely serviceable in the case of a gentleman who has attended my lectures this winter. About the commencement of November, while in a delicate state of health, he was attacked with cold, and got sore throat, followed by slight huskiness of voice, and hard, incessant, laryngeal cough. These symptoms continued during December and the greater part of January, and were not completely removed until the beginning of February. He had considerable rawness of the back and sides of the fauces and larynx; we observed that the mucous membrane of those parts had a strong tendency to become excoriated, for whenever an exacerbation of his symptoms occurred,

and that his cough in the morning was harder than usual, small portions of the detached pellicles of lymph, exuded by the mucous membrane, came way at each fit of coughing, and his sputa were tinged with blood. There was another symptom in this case, which you will very frequently meet with in similar instances, namely, a remarkable feeling of chilliness in the integuments of the fore part of the neck and external fauces. This he was in the habit of remarking, and could always foretell the occurrence of an exacerbation of his laryngeal symptoms, by the increased feeling of cold in the cutaneous surface over the diseased parts. In this case, a great deal of good was effected by the inhalation of iodine with conium. The mode in which this gentleman employed it, was by dissolving from six to nine grains of the extract of conium, in hot water, and then adding the tincture of iodine. Instead of the common inhaler, which contains but a small quantity of fluid, and in which the inhalation becomes cold in a very short time, he employed for the purpose a high old-fashioned teapot, which contained a large quantity of fluid, and could be used for a much longer period. Under the use of this, with counter-irritation, and the internal use of iodine with sarsaparilla, the laryngitis disappeared; it returned, however, about a month afterwards on fresh exposure, but was speedily removed by the use of the nitrate of silver solution.

Another thing which we have prescribed for this boy, and which proves an excellent adjuvant in the treatment of such cases, is counter-irritation by croton oil frictions. To an ounce of compound camphor liniment, we add twenty or thirty drops of croton oil; and of this lotion about one or two drams are to be rubbed over the parts, night and morning, until the eruption appears. Two rubbings are generally sufficient to produce a copious eruption of papulae about the size of a pin's head, and having exactly the appearance of a disease at present very rare—the *eczema mercuriale*.

We have not, however, been able to effect any remarkable improvement in this boy's symptoms, by the means to which I have just now alluded; and the question is, what other remedies have we left, from which we could hope to derive any advantage? The boy has no fever or emaciation, his appetite is good, his sleep regular, and the stethoscope informs us that there are no symptoms of tubercular development; we are therefore, I think, authorised in attempting to arrest the disease by the only means of which we have a choice under such circumstances. It is my intention to attempt its removal by mercury, and I have therefore ordered him to take, three times a day, half a grain of calomel, three grains of blue pill, with a grain of the extract of conium; and, instead of iodine, we have directed him to inhale the vapour of hydrargyrum cum cretâ twice or three times daily. If, however, we find that this does not produce speedy improvement of his symptoms, we shall stop it immediately, as the use of mercury in such cases is generally a perilous experiment. I shall also take care to pay

attention to the general state of his health, as this is a matter of great importance in cases of chronic disease. I had almost forgotten to observe that in such cases the use of the decoction of sarsaparilla with nitric acid has been found extremely beneficial. There is one point in the treatment of chronic laryngitis which you should never forget—and that is, to make the patients refrain as much as possible from speaking. Unless they do this, you will find it very difficult to effect a cure. A person with an inflamed larynx, who exercises his voice as usual, acts as foolishly as a man who reads with inflamed eyes, or walks with a sprained ankle. The only thing I have to add with respect to the treatment of this disease is, that the patient should be kept as much as possible in an equal temperature, and hence it will be necessary, in many instances, to confine him to the house, or at least to prevent him from exposing himself to a cold and damp atmosphere. When he recovers, he should use cold gargles and cold lotion to the throat, in order to render the parts less susceptible of cold.

Allow me now to direct your attention to two cases of *prurigo* which have been recently admitted. The first is that of Jane Cassidy, a woman advanced in life, but of tolerable good constitution, considering her age, station, and circumstances. About three months before admission, a rash appeared over her arms, legs, and body, which was preceded and accompanied by pain of the stomach, head, and limbs, with recurring rigors. As far as we can learn from her description, this appears to have been urticaria; of this, however, we cannot by any means be certain; and besides, it is of little consequence, as *prurigo* may come on without it. She is at present labouring under *prurigo senilis*, not thickly disseminated, but still a source of constant annoyance to her from the intolerable itching it produces. Several of the papulae have formed dark red crusts, but this is in consequence of their bleeding from being scratched.

This affection has been so well described by writers on cutaneous diseases, and is so easily recognised, that I shall not take up your time in detailing its characters; a few circumstances connected with treatment, however, should be mentioned as deserving your notice. In the first place, I may observe that *prurigo* is a most harassing complaint, and, if not checked, has a tendency to undermine the constitution by disturbing the patient's rest. The warmth of the bed-clothes, by increasing the vascularity of the skin, occasions an aggravation of the symptoms; the patient passes a miserable and restless night, and rises in the morning quite unrefreshed. This, in process of time, gives rise to a kind of febrile condition of the system; the mouth and fauces become dry; the appetite is impaired; the secretions deranged, and debility and emaciation gradually produced. It is a disease which has broken many a constitution, which, previous to its accession, was to all appearance unimpaired and healthy.

*Prurigo* has been confounded with common itch, but if you examine the parts it occupies you will easily distinguish them. It is

most likely to be confounded with the small vesicular itch, where the vesicular papulae (this is the most expressive term I can think of) are extremely minute. There is a papular itch, and there is also one which is intermediate between the vesicular and the papular; it is with the latter that prurigo is most apt to be confounded. The difference between them, however, may be recognised by observing the parts of the body on which they appear. Itch generally attacks the extremities, and particularly the inside of the joints, and the spaces between the fingers. Prurigo, however, does not occupy the same situations. If you examine this woman, you will not be able to find any trace of the eruption about the joints or between the fingers — and this circumstance is of itself sufficient to make the distinction, for itch would not have lasted for three months without attacking these parts.\* I may also observe, that prurigo senilis is generally accompanied by derangement of some of the important secretions of the body, but particularly of the urine. Its appearance is in many instances preceded by a scanty flow of urine, and it is frequently accompanied by the deposition of a copious whitish sediment, which is the lithate of ammonia. This observation is worthy of attention, because it furnishes us with a hint towards the treatment, of which we may sometimes avail ourselves with great benefit to the patient. You will, in such cases, often effect a great deal by the use of diuretic medicines — as cream of tartar with decoction of juniper berries and squill; or with the more stimulant diuretics — as turpentine and cantharides. It will be also good to vary these remedies according to the circumstances of the case, and they should be always given in combination with medicines calculated to act beneficially on the digestive organs. In this case, we have given decoction of sarsaparilla with nitric acid for the last two days; before this we gave cream of tartar with powdered bark. These are some of the best medicines which can be used internally in the treatment of prurigo senilis. It is, however, a very obstinate disease, and you will be often obliged to try many internal and external remedies before you can hit on one that will prove serviceable. Cooling diuretic aperients, aperients combined with tonics, and the decoction of sarsaparilla with nitric acid, — these are the chief internal remedies; as to external ones, they are extremely numerous. In the present case we have, in the first place, directed the patient's body to be washed with a lather of soap and warm water every night and morning. The water for this purpose should be used as hot as the patient can bear it, and a very soft brush or sponge should be employed. In prurigo, a vast deal of good has been done by merely washing the itchy parts with soap and warm water; how it acts I cannot say, but I have seen a great

\* [There is often much difficulty in these cases, because inveterate itch is usually attended with prurigo; although the converse of this is not exactly true. The true itch is always vesicular at first, before the epidermis has become destroyed, and the little ridges which contain the insect lodged under the skin may generally be detected near the vesicle, and running towards it. — *Ed.*]

deal of advantage derived from a long-continued perseverance in its use. After this you may have recourse to more powerful applications — such, for instance, as sponging the parts at bed-time with hot whiskey and laudanum, a pint of the former to a dram of the latter. Here you have the stimulant effect of the whiskey, the narcotic of the laudanum, and the peculiar action of heat on the skin, all combined, and calculated therefore to make a very decided impression. How this effect of heat is produced I cannot tell, but we all know that, whether applied in a moist or dry form, it exercises a powerful influence over the vascularity and nervous vitality of the skin. Neither can I tell you what description of cases are most likely to benefit by it; some cases of prurigo senilis are much relieved by warm applications, others are not; you should, however, always make a trial.

There was one application used in this woman's case, to which I shall briefly call your attention. A dram of acetate of lead was dissolved in two onnces of wine vinegar mixed with the same quantity of water, and this was rubbed up with olive oil so as to form a liniment. Mr. Nalty, who mixed up the ingredients, says that three ounces of olive oil were absorbed. You are aware that oil conducts itself, with respect to the metallic oxides, as it does with the alkalies. This formed a liniment, which, when allowed to stand, separates; but its ingredients are at once mixable by shaking the bottle. From its use the woman has derived great relief, and I can recommend it to you as one of the best applications in prurigo.

Before I conclude this lecture, I shall allude briefly to the very interesting case of Sarah O'Neil. This young woman was admitted on the 17th of February, having been attacked, on the 10th, with fever of the ordinary type. On the day after her admission, she complained of want of sleep, and pain of the forehead and temples; but she had no raving, tinnitus aurium, intolerance of light, or other symptoms of inflammation of the brain. She had been confined about a fortnight before she came in, and complained that her breasts were very troublesome to her. Her belly was soft and fallen, quite free from tenderness or soreness, and she stated that her bowels were free. Her tongue was furred, her pulse 130, the lochia suppressed for the last two days. Things went on tolerably well for four or five days, when her belly became tympanitic, and she began to complain of pain on pressure. The action of the heart now became more violent; her pulse rose to 140, and blood began to appear in her stools. On the 24th of February — that is to say, about the fourteenth day of her illness — her pulse was 150; she passed a large quantity of blood from the bowels, and the tympanitis subsided.

In cases of fever accompanied by tympanitis and signs of intestinal congestion, hemorrhage from the bowels, particularly when it occurs on one of the critical days, should not be interfered with. It is in this way that nature very frequently brings about relief of

the congestion and irritation of the gastro-intestinal mucous membrane, just as she relieves congestion of the head by bleeding from the nose. In the case of a lady whom I attended along with Mr. Palmer, some time ago, at Drumcondra, the occurrence of intestinal hemorrhage was followed by the most marked effects; her belly became soft, the tympanitis disappeared, and all her febrile symptoms were speedily removed. The appearance of blood, therefore, at such periods and under such circumstances, is to be looked on as a favourable occurrence; nor should it be interfered with in any way until, from its continuance or its quantity, it appears likely to produce debilitating effects. In the present case, however, this hemorrhage will require to be very carefully watched. The woman's system is in that state which is favourable to profuse fluxes of blood, for it is not long since her accouchement, and she has had suppression of the lochia. She has had but little fever for the last two or three days, but the action of the heart still continues extremely violent, and her pulse is still rising. Respiration, too, has been considerably accelerated; and, where this occurs, you have always reason to apprehend danger. I have accordingly endeavoured to moderate the hemorrhage by the use of acetate of lead and opium. A draught composed of two grains of acetate of lead, eight minims of tincture of opium, and fifteen minims of wine vinegar in six drams of water, has been prescribed to be taken as occasion requires. A large blister has been applied, so as to cover the epigastrium and sternum, and she has been allowed port wine and chicken broth. Where a patient, debilitated by previous fever, has been attacked with hemorrhage, you should be careful in supporting the system by small quantities of wine, and light nutritious food; for there is always more or less danger to be apprehended of a sinking of the powers of life. In cases of this kind the cautious use of acetate of lead, with opium and wine, are the only means on which we can rely with any confidence.

I regret that time will not permit me to make any further observations on this very interesting case; I shall, however, resume its consideration at our next meeting.

# CLINICAL LECTURES.

## SECOND SERIES.

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### LECTURE I.

Introduction — Connection between diseases of different organs; between arthritis, jaundice, and urticaria; between periostitis, produced by abuse of mercury, and hypertrophy of the liver — Details of cases illustrating this connection — Its explanation — Hypertrophy of the liver produced by scrofula — Enlargement and inflammation of the liver after scarlatina — Importance of recognising this disease.

ALTHOUGH it is customary to state at the commencement of a course of clinical lectures, the mode of instruction the teacher intends to pursue, it is not my intention to dwell on the plan of communicating medical information adopted in this hospital, or the facilities, advantages, and inducements which it affords. I have spoken so often on the subject, and my opinions have been so long before the public, that I do not feel it necessary to enter into details on the present occasion. It is extremely satisfactory to me to find that the mode of clinical instruction which I introduced at this hospital in 1822, has been adopted in most of the Dublin hospitals, and in many of the medical institutions of Great Britain. It is now several years since I delivered an introductory lecture at the old Meath Hospital on the Coombe, setting forth the insufficiency of the clinical instruction imparted to the students in Dublin at that period, and proved, to the satisfaction of my auditors, that the German mode was infinitely superior. The lecture I then delivered was subsequently published in the London Medical Gazette.\* This mode I soon afterwards introduced at this hospital, and it is a source of extreme gratification to me to find it adopted and approved of by so many medical teachers of established reputation. It is recommended at once by its simplicity, and by its admirable fitness for fulfilling the purposes which it is intended to accomplish. A card is suspended over each patient's bed, on which is recorded the date of his admission, the history of his case, and the daily

\* See Medical Gazette, vol. x. p. 401.

treatment, dietetic as well as medical. These cards remain in the wards until the patient leaves the hospital, and in this way any gentleman who wishes to observe the progress and termination of any particular case, can easily make himself master of its principal features, and the different remedial agents employed for its alleviation or removal. I shall not dwell any longer on this subject, as my object at present is to excite you to a diligent cultivation of the many and valuable opportunities which this institution affords. Go round the wards, and observe the numerous and varied forms of disease they present. You will find in them many examples of morbid affections, interesting alike to the student and the practitioner, and capable of affording practical lessons of inestimable value. He must be sadly deficient in zeal, attention, and every other quality necessary to constitute the accomplished and successful physician, who does not feel himself excited to study by what is there presented to his observation.

Did time permit, I should be glad to furnish you with an outline of the most interesting cases which have been under treatment in our wards for the last three months, in order to give you some idea of the prevailing forms of disease, and their most remarkable modifications; and in this way to prepare you for studying with more advantage the cases that may come under your notice during the ensuing session. We have had some cases of extreme interest during the months of August, September, and October; but I fear even a brief review of these would occupy more time than I could conveniently devote to the subject, and would interfere with matters of paramount importance. I have, however, kept records of these cases, and shall feel most happy to show them to any gentleman who may be anxious to peruse them. Before I proceed to make any observations on the cases at present in our wards, I shall give a statement of the most remarkable results obtained in the chronic wards, and the most important pathological observations made in the fever wards during the last three months. This will occupy but two or three lectures, and in the interim I shall each day direct your attention to anything of importance which occurs in the wards. It is my intention at present to limit myself to the illustration of some points connected with pathology, and to dwell merely on those prominent features of disease which bear a special reference to practical medicine; I shall afterwards give some lectures on fever. I shall not enter into any disquisition as to the origin and cause of fever; for these matters you must consult your books: all you can expect from me is to endeavour to impart to you some useful hints on the treatment of fever.

In order to acquire a correct and available knowledge of human pathology, and to extend the range and confirm the accuracy of diagnosis, it is of the utmost importance to observe attentively the connection between the diseases of certain organs or systems of the body. You are aware that some organs, when labouring under disease, are apt, after the disease has continued some time, to im-

plicate other organs, giving rise to various deranged conditions which are developed, sometimes simultaneously, but in general consecutively, and in sequence. I have already pointed out several diseased actions thus associated together, each forming a link in the morbid chain. Now it is of the greatest importance to study each link, and ascertain the nature of its connection, so as to have a distinct conception of the whole. Last session I directed the attention of my class to a train of morbid phenomena sometimes observed co-existing with arthritic inflammation. A person labouring under inflammation of the joints gets an attack of hepatitis, accompanied by jaundice, and this is followed by urticaria. I have observed this sequence of disease in eight or nine cases. The first was in a gentleman residing in Lower Mount street, whom I attended with Dr. Cheyne. This gentleman, in consequence of exposure to cold, was attacked with arthritic inflammation and fever. After he had been about ten days ill, he became suddenly jaundiced, and in a day or two afterwards a copious eruption of urticaria appeared over his body and limbs. Exactly the same train of phenomena, and in a similar order of succession, were observed in a man treated in the Meath hospital in 1832. A short time before this I had been attending a medical friend in Baggot street, who had been affected in the same way; and I mentioned to the class, as soon as I perceived the man was jaundiced, that he would most probably get urticaria. I made a similar prediction in a case which occurred recently in our wards, and it was verified by the event. Now this is not a mere fortuitous occurrence; the various symptoms must be connected in the relation of cause and effect. It is interesting to bear this in mind, and it is besides of considerable importance to the practising physician; it enables him to predict the appearance and form of disease, and inspires his patient with confidence in his opinions and judgment.

There is another sequence of disease not unfrequently observed, but of which the connection has not been hitherto noticed by any writer, as far as I can ascertain. About two years since, Mr. Crampton and I were consulted by an English gentleman, who had been ill for a considerable time. The history of his case from the commencement was this:—Three years previously he had venereal—used and abused mercury—was exposed to cold, and got periostitis. He now got into a bad state of health, used mercury a second time, obtained some relief, and then relapsed again: finally, after having used mercury three or four times, he was attacked with mercurial cachexy, became weak and emaciated; the periostitis degenerated into osteitis, producing superficial caries and nodes of a bad character; he had exfoliation of the bones of the cranium, and rupia, and was reduced to a most miserable state. Under our care the symptoms gradually disappeared; he recovered to all appearance, and even got fat. He then caught cold, and relapsed again. At last his liver became engaged; he was attacked with hypertrophy of the liver, ascites, and jaundice, and died soon

afterwards. Here, then, we have venereal, abuse of mercury, periostitic inflammation, abuse of mercury followed by exacerbation of the periostitis, and the establishment of mercurial cachexy, and the history of the case is wound up with hypertrophy of the liver. This was the first case in which I had observed this concatenation of disease; since that period I have seen a similar train of morbid phenomena, twice in private practice and once in hospital. First we have abuse of mercury, then periostitic inflammation and mercurial cachexy, and the scene is closed by morbid enlargement of the liver. Now I do not look upon this sequence as merely fortuitous. The diseased actions are, I think, related as cause and effect, and each successive condition is consequent on the previous one. It may not be amiss to mention here some curious circumstances observed in the case to which I have just alluded. While this gentleman's liver was enlarging, there was no tenderness of the right hypochondrium on pressure. I have observed the same absence of tenderness in all the cases of this description which I have witnessed. The gentleman could bear pressure over the hepatic region without any inconvenience, and yet the liver was so enormously increased in size, that its inferior margin extended almost down to the pelvis. What is equally remarkable, he had no fever, and the tongue was perfectly clean and moist during the whole course of the hepatic affection. In my observations on a case in the fever ward, I remarked a few days since that some persons were too hasty in drawing inferences from the state of the tongue as to the existence of affections of the digestive organs. I shall not touch on this point, however, at present, and shall merely observe that this gentleman's tongue was perfectly clean and moist, notwithstanding the morbid condition and rapid growth of the liver. Another curious circumstance was, that during the hepatic affection, digestion appeared to go on very well, at least so far as the formation and due expulsion of faeces are concerned. The alvine evacuations were regular, and the matter discharged presented the form and consistence of that which is passed by a person in good health. But there was a peculiarity in it to which my attention was first directed by the patient, who was an intelligent and observant person. The cylinder of faecal matter was composed of parts differing in colour and appearance; two or three inches consisted of pale clay-coloured substance; and immediately after this another portion of about the same length was observed, presenting the ordinary bilious or brown colour of natural excrement; and then again another mass of clay-coloured matter, without any obvious trace of bile. This appearance I have now frequently witnessed; and the inference to be drawn from it is this—that in such forms of hepatic disease the functions of the liver are performed, as it were, intermittently; it secretes bile during a certain period of the digestive process, then stops, and then secretes again.

This peculiarity is noticed in many diseases of the liver; and it is important to remark, in attempting to explain the *rationale* of

these hepatic affections, that in no disease of the liver is this symptom more frequently observed than in the scrofulous. Scrofulous disease of the liver is that state in which there is an increase of size in the organ, with induration and imperfect secretion, but without any remarkable tenderness. This condition in children is accompanied with irritability of the digestive organs, fretfulness, emaciation, loss of sleep, and impaired nutrition. The little patient becomes what is termed "pot-bellied," and labours under thirst, debility, and febrile excitement. This has been frequently called remittent fever, and disease of the mesenteric glands, but in my opinion unjustly. It is only a form of general cachexy connected with the scrofulous diathesis, affecting secretion and nutrition in general, and the digestive and biliary systems in particular. It would be quite wrong to imagine that, in this form of disease, the liver is the cause of the whole train of morbid phenomena ; it is merely affected in common with other organs, and forms only an individual feature in the group of symptoms.

Now in this form of scrofulous cachexy, where you have diarrhoea, emaciation, fever, thirst, and restlessness, the liver is frequently affected in the manner already described ; and in the loose stools of such a child you will find one part bilious, another part clay-coloured ; they will be yellow to-day, and pale the next, accordingly as the liver secretes bile or suspends its functions. But in this instance, I repeat that the liver is only one of many organs affected by the same general cachexy. Could we ascertain the derangements of other secreting organs with the same facility, it is very probable we should find similar evidences of the morbid influence which pervades the whole system.

This view of the question shows that you are not to expect to succeed in removing the disease by the use of calomel or any other mercurial preparation. Many of those persons whose practice is little better than routine, when called to treat a case of this description, first examine or inquire as to the nature of the alvine evacuations, and fixing on the single symptom of deficiency of bile, immediately prescribe calomel, to be repeated or continued until the secretion of the liver is established ; but they forget that this state of the biliary system depends on the general state of health, and the absence of bile is the consequence, and not the cause of the disease. Almost all the organs of the body are affected ; and though calomel may restore the secretion of the liver for a time, it cannot bring back the organ to its natural state, or cure the disease. The malady is to be remedied in a different way : the secretions (and that of the liver among the rest) are to be improved by change of air, by an appropriate diet, by exercise, tepid or cold bathing, and the use of those remedies which are adapted to modify or correct that state of the system on which the general derangement depends.

An observation of such cases has led me to a train of reflection respecting the occurrence of the same order of symptoms in persons who have been injured by the abuse of mercury. Many

persons who get venereal employ mercury injudiciously, and fall into what has been termed the mercurial cachexy, in which there is a general unhealthy state of the organs. A patient who has fallen into this state very closely resembles a scrofulous person, and is apt to labour under the same emaciation, impaired nutrition, irritability, feverishness, and the same sort of cutaneous, glandular, and periostitic affections. The chronic mercurial cachexy is very like the scrofulous, and attacks very nearly the same organs and tissues. Hence the difficulty of curing affections of the liver and other organs, when they are the result of this depraved habit. This is the key to the explanation of those horrible ravages which we frequently witness in cases of venereal disease complicated with mercurial cachexy—a state of constitution which is closely allied to the scrofulous. You will frequently meet with this consecutive affection of the liver in cases of *morbus coxae*, where the patient has been labouring for years under ulceration of the joint. The growth of the rest of the body appears checked, the patient is stunted and emaciated, while the liver increases rapidly in size. It was from observing the occurrence of liver disease in the persons labouring under the scrofulous cachexy, that my attention was first turned to its occurrence in persons broken down by long or injudicious courses of mercury.

One word as to the curability of hepatic affections of this kind. I believe that it is always an unpromising form of disease; but persons of originally good constitution, and under the age of thirty, will generally escape, if treated judiciously, and with proper care and attention. Some months ago I attended, with Dr. Marsh, a young gentleman labouring under this affection, as a consequence of the abuse of mercury. We found him greatly emaciated, and labouring under considerable enlargement of the liver, with commencing ascites. He had also great determination of blood to the abdomen, diarrhoea, and hemorrhoids. By strict attention to his bowels, a well regulated diet, change of air, and the use of *taraxacum*, *conium*, and *hydriodate of potash*, he was ultimately cured, after an illness of nearly two years, during which the liver had grown to an enormous size. I may state that he is at present in good health, and that the liver is nearly reduced to its natural dimensions. It may be proper to add, that this gentleman's age is about four and twenty.

I observed one circumstance in the progress of this case which is worth noting. He was suddenly attacked with a papular form of *purpura*, accompanied by much tingling and itchiness, and answering to the description given of *purpura urticans*. This peculiar eruption was very troublesome at night and formed several successive crops, which altogether lasted a month. It occupied the extremities upper and lower, and was very abundant on the latter. This gentleman wore a bandage to relieve a varicose state of the veins of the left leg. Now the eruption never appeared in the

parts subjected to the pressure of bandage, although it was very thick immediately below and above those parts.

In persons below thirty the liver may become enlarged to a very considerable extent, and yet return again to its natural size under proper treatment. I could point out several persons in Dublin in whom the liver had been so much enlarged that I thought their cases hopeless, and yet they have recovered, and are at present in the enjoyment of good health. The process by which the organ returns to its natural state and dimensions is generally slow; in two or three cases it occupied a space of time varying from one to two years. I attended a gentleman some time ago with Mr. Carmichael; and from the history of the case, as well as the symptoms present, we were induced to look upon it as incurable; and yet the patient has completely recovered. Mr. Macnamara and I attended a lady who had a very remarkable enlargement of the liver, but in the course of the year the viscus diminished so much in size, as to be very little above the normal dimensions. This is a matter of no common interest, for cases of this description have been generally looked upon as beyond the reach of medical aid. You should therefore be very careful in your prognosis of such cases, and not give them up at once as incurable.

I may observe, in conclusion, that it is entirely as the result of the cachectic habit that this enlargement of the liver is observed. I have assumed this principle as the basis of my argument, and I think it is founded in fact and truth. It is also curious to observe, that the same cachectic state which gives rise to emaciation and decay of the body, generally occasions hypertrophy of some particular organs. What we most commonly observe in such conditions is, general wasting of the system, accompanied by increased morbid nutrition in certain organs. This appears to be the general law. You perceive that in the explanation I have given, I have supposed that enlarged liver is the result of a general cachectic state of the system, and it is of importance to recollect that this state may be brought on by the injudicious exhibition of mercury, or by carrying mercurialisation further than the constitution will bear. In this instance we are compelled to allow that our practice may furnish weapons to be turned against us by the disciples of homœopathy. It cannot however be denied, that the immoderate use of mercury has been productive of liver disease. The late Mr. Hewson pointed out this to the attention of those who visited the Lock Hospital while under his care. At this period it was the custom to salivate every patient, and keep him under the full mercurial influence for a month or two; and it frequently happened that, just as the mercurial course was finished, the patient got disease and enlargement of the liver. Were I inclined to theorise, I might perhaps offer some fanciful hypothesis in explanation of this occurrence, and might trace some connection between the stimulant effects of mercury on the liver, and the subsequent hypertrophy. I shall, however, content myself at present with noticing the fact, and leave

the explanation to my juniors, who always explain matters, according to my observation, much more readily than their seniors.

There are also other diseased states of the system, in which we have enlargement and morbid alteration of the liver. I can point out to you four different states of the system in which hypertrophy and disease of the liver forms one of the results of the general affection of the system. The next of those to which I shall direct your attention is scarlatina. Those who have attended the wards during the past month have seen examples of this. We have observed during the same week two patients labouring under scarlatina, who got disease of the liver and jaundice. One of the patients, a little boy, was attacked with the disease in an extremely violent form, accompanied with high fever, and a very remarkable eruption. In a few hours after the exanthema appeared, the entire cutaneous surface was dyed of a brilliant red; in fact, the skin looked as if it had been painted over, and there was not a single spot free. In cases of this kind the violence of the cutaneous inflammation is sufficient to kill, without any other unfavourable complication; and the patient seldom lives more than three or four days. You observed in this case that the whole epidermis peeled off. But what I wish to direct your attention to is, that this boy after two days had evident symptoms of disease and enlargement of the liver. A young man, in the same ward, had also an attack of scarlatina, but in a milder form. On the third day he likewise got inflammation of the liver, but was cured by general and local antiphlogistic treatment. You are aware that scarlatina is one of those diseases in which a train of unfavourable sequelæ are apt to remain after the removal of the original complaint. Persons, after recovering from the exanthematous fever, will sometimes get into a bad state of health, and instead of convalescing, become restless and feverish towards evening—have an irritable jerking pulse, hot skin, derangement of the digestive organs, diminished urinary secretion, and finally become dropsical. Now, from observing the supervention of hepatic disease in such cases, both in hospital and private practice, my attention has been directed to the liver; and I never omit making an examination of that organ when called to treat those symptoms which are looked upon as the sequelæ of scarlatina. In many of these patients I have found the liver in the state of inflammation of rather a chronic character, and without any of that remarkable pain or tenderness which characterises acute hepatitis. But still it was inflamed, as proved by the benefit derived from local antiphlogistic means; and, moreover, its condition appeared to retard and prevent convalescence. Not long since, a friend of mine, a very intelligent practitioner, who was attending a case of this description, and had tried variety of remedies without any benefit, was very much surprised when I drew down the bed-clothes and showed him that the liver was diseased. He had not thought of the existence of anything like an hepatic affection, and was very much surprised that his treatment had proved so ineffectual. By

the use of leeches to the right hypochondrium, the employment of mercury, and a proper regulation of diet, the patient was soon relieved, and the fever, thirst, and anasarca, quickly disappeared. In cases of this kind the hepatic affection is the result of the general inflammatory diathesis superinduced by scarlatina. You are all aware that nothing is more common, after scarlatina, than inflammation of various organs. Thus some persons are attacked with pleuritis, some with pneumonia, others with inflammation of the liver. Many persons continue in a valetudinary state after the eruption has declined; they do not convalesce according to our expectations; the pulse remains rather quicker than natural; the bowels are deranged; the appetite bad; thirst urgent, and urine scanty. In many of these cases you will find that there is a species of chronic hepatitis going on, which keeps up the feverishness and retards convalescence. This is a point of great importance, to which I am the more anxious to draw your attention, because even the latest writers on scarlatina have either entirely omitted, or very insufficiently noticed it.

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## LECTURE II.

Connection between disease of the liver and disease of the heart — Chronic hepatitis, from this source, curable in young persons — Enlargement of the spleen connected with superficial ulceration of the legs — Erysipelas and gangrene, sometimes of a pseudo-inflammatory character — Treatment of this form of disease.

At my last lecture I endeavoured to point out some remarkable connections of diseased action observed in certain morbid states of the economy. I shall pursue the subject a little further to-day, as I look upon it as extremely important in a practical point of view. There is another organ whose morbid affections frequently implicate the liver: I allude here to the heart. I have already spoken of certain cachectic states, in which the liver becomes enlarged and hypertrophied as the result of the general derangement of the system. In the present case the hypertrophy and disease of the liver originates in a morbid condition of the heart; this is a very frequent cause of hepatic derangement. You have an example of it at present in the chronic ward, in the case of a poor man labouring under bronchitis of long standing, with disease of the heart, dropsy, and enlargement of the liver. In cases of this description, it is a matter of some difficulty to determine in what organ the morbid sequence commences; for where many diseases co-exist, it is not easy to ascertain how they are related to each other as cause and effect. I have, however, had several opportunities of observing the progress of the disease from the commencement, and the manner in which the different organs become successively implicated.

Some time ago there occurred a remarkable example of this form of hepatic affection in a relative of mine, aged fourteen, who, in

consequence of exposure to cold, was attacked with rheumatic inflammation of the joints, of a very intense character. Owing to a want of proper care, the disease was allowed to go on unchecked, and metastasis to the pericardium took place. I happened to be out of town at the time, and he had no advice or assistance for nearly twenty-four hours. Pericarditis of a violent character became developed, and it was only by the most energetic treatment that he escaped with his life. He had pericarditis with effusion, and all the physical signs and symptoms of carditis. After the acute symptoms were removed, the signs of adhesion of the pericardium, hypertrophy, and partial valvular disease, continued; and for a long time the heart's action was invariably accompanied by a loud *bruit de soufflet*. These affections were followed by dyspnoea and increased action of the heart. But this was not all: he next got inflammation of the testicle, and finally chronic hepatitis with enlargement. The liver grew to a very considerable size; it continued to enlarge for about seven months; and, altogether, he laboured under a chronic form of hepatitis for more than a year. At last the disease yielded to treatment, and he recovered completely.

This, you will say, was a fortunate termination; but in young persons the powers of nature often act in a very remarkable manner in remedying or removing disease, and cures are sometimes effected in such patients which it would be quite absurd to expect in persons advanced in life. After having laboured under a long train of diseases, and having continued an invalid for nearly five years, this young gentleman at last, owing to his youth and favourable constitution, surmounted all his maladies, and is at present as strong and healthy as any person I am acquainted with. In this instance the chronic hepatitis was the result of the pericarditis, which formed the first link in the chain; and for the space of a year this young gentleman continued to labour under an affection of the liver—the result of disease commencing in the heart. This is a morbid sequence very frequently observed. You have pericarditis accompanied with inflammation of the lining membrane of the heart, partial disease of the valves, hypertrophy of the muscular substance, and then enlargement and induration of the liver. This is a very common complication, and deserves your most particular attention. When you see a patient whose appearance indicates disease of the heart—who has swelling of the face, dyspnoea, lividity of the lips, and turgescence of the cutaneous vessels; in fact, that peculiar expression of countenance which at once informs the practised observer that the patient is labouring under disease of the heart—you should not neglect to inquire after the condition of the liver, for in such cases it is very frequently in a state of chronic disease. I pointed out this circumstance some time since, in the case of a late surgeon, Mr. M., and directed the attention of the medical gentleman, engaged in the treatment of the case, to the liver, in which no one had suspected the existence of disease.

Recollect, therefore, that in many cases of disease of the heart you will also, on examination, find disease of the liver, produced, as far as I can judge, in the majority of instances, by disease of the heart; at least, I think I have never seen any case in which the hepatic affection had the initiative, and seemed to have brought on the organic affection of the heart. In Mr. M.'s case, and several others which I had an opportunity of watching from the commencement, I have no doubt that the disease of the liver was secondary, and that the morbid sequence commenced with the heart. I am quite convinced that disease of the liver may give rise to functional derangement of the heart; for whatever impairs secretion and deranges digestion will give rise to palpitations, tendency to syncope, and other phenomena of functional disease of the heart; but I have never seen any example of organic disease of the heart as the result of disease of the liver.

It is of some importance to be aware of this complication; for, in treating the disease of the heart, you must also attend to the hepatic affection, because it has a tendency to aggravate and confirm the cardiac symptoms. This affection, however, is not to be looked upon as acute, or even sub-acute, hepatitis. There is scarcely any pain of the side or tenderness present, and the patient is not always jaundiced; it appears to be scarcely anything more than congestion, causing hypertrophy and chronic morbid growth. I shall not, however, speak too positively on the subject, as the difference between hypertrophy and inflammation of a low and obscure character cannot be easily determined.\*

There is another disease in which derangement of the liver is a common symptom, and I bring it forward chiefly for the purpose of rendering the subject under discussion more complete, as it is an occurrence well known to practitioners, and sufficiently dwelt on in medical books. I allude to that affection of the liver which is observed in cases of intermittent fever. Ague frequently produces a powerful determination to the internal organs, particularly the liver and spleen; and if treated badly, or unsuccessfully, is apt to bring on disease of the liver. The organ becomes congested, hypertrophied and indurated, and presents a condition somewhat analogous to that which supervenes on disease of the heart, or results from the cachectic state of constitution produced by mercury or scrofula.

The next form of organic derangement which I shall briefly touch on is that of the spleen. It is of advantage to place cognate affections beside each other, for the purpose of comparison; by doing so, we frequently derive many instructive and useful analogies.

\* I am glad to find that this subject has been taken up by so able an observer as Dr. Bright, who, in the third number of Guy's Hospital Reports, p. 605, has made some excellent remarks on the influence of heart disease in producing congestion of the liver. In Dr. Elliotson's Human Physiology, Part I., p. 103, there are some observations which throw much light on the intimate relation existing between the circulation within the chest and the liver.

gies. Besides, we have had a remarkable case of enlargement of the spleen in our wards at the same time we had the cases of hepatic disease to which I have alluded. I may observe that the circumstances under which enlargement of the spleen takes place differ, in many points, from those which determine hypertrophy of the liver. We have but few examples of inflammation of the spleen, while the cases in which enlargement and congestion of that organ take place are numerous. From the peculiarities of its anatomical structure, the spleen is very apt to become suddenly enlarged. Like the liver, it may become indurated and hypertrophied from intermittent, or from some general disease affecting the system, and thus lead to a train of secondary phenomena — the most remarkable of which is dropsy. But there is one peculiar symptom attending enlargement of the spleen, which I have frequently pointed out to the attention of the class, as observed at least in two-thirds of the cases, and of which we had an excellent specimen in the patient under treatment in the chronic ward. The history of this symptom is the more curious, as showing a remarkable uniformity in the phenomena of a particular disease at very distant periods of time. This is seen by comparing the most recent descriptions of Indian splenitis, as given in an able analysis of Voight's work on the Spleen, published in a late number of the British and Foreign Medical Review, and the description of enlargement and disease of the spleen given by Aretæus. The ancients, it is true, cannot be now considered as authorities to be followed either in pathology or practice; for they were ignorant of many of the most important facts connected with the healthy and diseased states of the human body. In consequence of their inaccurate anatomical notions, they were unable to appreciate or describe many of those details which now enrich the domain of pathological anatomy; their writings, however, are invaluable in many respects, as containing admirable descriptions of diseases which still continue to infest the human body, and as recording certain groups of symptoms which are still associated. A comparison of their descriptions with those of modern times cannot fail to be extremely curious, and may even prove highly instructive; for if we find that certain internal affections have, from the most remote antiquity up to the present period, been generally accompanied by peculiar derangements of distant parts, we are authorised in considering this connection to be something more than accidental, and consequently we may be led to discover relations between organs generally believed to be quite unconnected with each other. Thus, some years, I had three patients in succession under my care, who laboured under chronic enlargement of the spleen, who were all affected with a similar sort of cachexy, and had all the same affection of the skin — namely, superficial ulceration of the legs. This coincidence forcibly arrested my attention; and I was still more struck with the observation, on finding that Aretæus had noticed this very circumstance in his admirable description of splenitis. "If (says he) the spleen does not suppu-

rate, but becomes chronically enlarged, then the patients lose their appetite, and become cachectic, swollen, and of an unnatural colour, while the surface of the body manifests a disposition to ulcerate, particularly on the legs; the ulcers are hollow, round, livid, sanguous, and difficult to heal." This description agrees precisely with the cases to which I have already referred, and it coincides in a very remarkable manner with the account lately given by Dr. Voight, of chronic disease of the spleen, as it occurs in India. He observes, that the cachexy connected with the splenalgia Bengalensis frequently manifests itself by a tendency to ulceration; the disposition to which is so great, that leech-bites and blisters occasionally give rise to foul or phagedenic ulcers, which, under certain circumstances—as where the patient has used mercury, and is residing in a swampy district—will sometimes run on to a fatal termination. It is also curious, that the predisposing causes of the different varieties of chronic enlargement of the spleen, as given by Voight, are exactly the same as those detailed by Aretaeus; and both writers correspond in their statements as to the age and habits of life of persons most liable to this disease, as well as the nature of the locality and the season of the year most favourable to its production. This agreement between authors separated from each other by so many centuries, and who described the disease as it occurred in distinct regions and among different races of mankind, is extremely curious, and exhibits a very remarkable example of the identity of the morbid phenomena produced by the same causes.

So far of the pathological states of particular organs which arise in certain conditions of the system, and most generally form a terminating link in the chain of diseased action. You will perceive that my observations are chiefly limited to a detail of the most important pathological observations made in our wards during the preceding three months. After we have made a brief review of what has occurred during this period, we shall take up the consideration of the cases at present under treatment.

The next disease which came under our notice so often as to deserve a separate notice, was erysipelas. There were some points of interest connected with the history of the erysipelas which prevailed in this hospital during the months of August, September, and October. In the space of somewhat more than two months, we had about twenty cases of this disease; and, indeed, the morbid cause appears to be still lingering in our wards, though less frequently manifesting itself, for we have had only one case within the last ten days. Before, however, I proceed to notice the phenomena of the disease, as observed here, I shall make a few observations connected with the treatment of this affection in general. I am anxious to direct your attention to this point, because the history of this epidemic has furnished some useful lessons, and has shown how much the treatment of any disease will depend on its epidemic character and existing peculiarities. The disease was treated here in every instance, and through all its stages, with wine, quinine,

and opium ; and, with the exception of a single case, this treatment has proved uniformly successful. Erysipelas, you are aware, is generally looked upon as an inflammatory disease, and its treatment is always more or less antiphlogistic, particularly during the early stage. At this period it is customary to treat it with general bleeding, leeching, scarifications, purgatives, mercury, and tartar emetic ; and I will allow that many cases should be treated in this manner. But the gentlemen who have attended this hospital within the last three months have witnessed a form of erysipelas which required, from the beginning, an exactly opposite line of treatment. In the management of the cases which fell under our observation, no one in his senses would think of using general or local depletion, purgatives, or tartar emetic. The moment the disease appeared, we were obliged to attack it with tonics, narcotics, and stimulants. You perceive, then, that in erysipelas there are two very distinct extremes, between which there are many intermediate shades and varieties. It is well to bear this in mind. When you are called to treat a case of erysipelas, you should recollect that it is a disease capable of exhibiting a great variety of forms, amenable to no fixed line of treatment, and requiring for its management all the sagacity and skill of an accomplished practitioner. I have seen many instances in which this affection appeared in a distinct and well-marked inflammatory form ; and I have treated cases with venesection, leeching, purgatives, and tartar emetic, and found these means admirably well-fitted to remove the disease. Here, on the contrary, wine, opium, and sulphate of quinine, were the only remedies on which we could rely with any degree of confidence. On the other hand, you will meet with intermediate cases in which these different modes of practice should be employed, either at distinct stages of the complaint and at a considerable interval, or should succeed each other by a rapid transition. Erysipelas, I must again repeat, should not be treated from its name. Many persons have maintained that, when gangrene supervenes on inflammatory affections — and, among the rest, on erysipelas — it is the result of an excessive degree of inflammation, and that it might be successfully combated by judicious depletion. This, however, is by no means generally true ; and it is of importance that, in forming proper notions of the pathology and treatment of erysipelas, you should dismiss from your minds all preconceived opinions, and be regulated solely by the impressions derived from correct observation and facts. What I wish to impress upon your minds is, that gangrene may and does occur in cases of erysipelas quite independently of excessive inflammatory action, and requiring a plan of practice quite different from the antiphlogistic. I do not assert that gangrene does not arise, in many instances, from the violence of erysipelatous inflammation, and that in such cases it is to be met by prompt and decided antiphlogistic treatment, but I think your views of the pathology of this disease will be both imperfect and false, if you look upon the gangrene which frequently supervenes in ery-

sipelas as the result of immoderate inflammatory action. The following case, which is one of extreme interest, will, I think, bear me out in my assertion.

Mrs. B., a lady of middle age, was attacked with feverish symptoms on the 24th of last March. Notwithstanding the diligent employment of antiphlogistic treatment by Mr. Barker, the pyrexia increased; in the course of a few days her throat became sore, and shortly afterwards erysipelas appeared on the face. Her case assumed a very dangerous aspect; she continued seriously ill for some days, and was saved with difficulty. On the 1st of April, Mr. Carmichael advised the diligent application of fomentations, with the view of relieving the local symptoms; and her son, a young man of eighteen, of temperate habits, florid complexion, muscular frame, and who had always enjoyed a vigorous state of health, undertook the duty of applying the fomentations with much zeal and assiduity. Towards evening, he thought, but without reason, that her case was hopeless, and fell into a violent paroxysm of grief, from which he was induced to rouse himself for the purpose of resuming his occupation of applying the fomentations. While thus engaged, he got, to use his own expression, "a whiff of sickening air from the bed-clothes," and immediately felt unwell. This was on the 1st of April. On the 2d, he was feverish and complained of headache, for which he got aperient medicine, and was leeched. On the 3d, there was no improvement, and he had passed the night without any sleep. On the 4th, Mr. Carmichael considered it necessary to leech the temples again, and to continue the exhibition of antiphlogistic and aperient medicines. He now began to complain of severe pain in the right shoulder, which at first appeared to be of a rheumatic nature. He became more and more restless, and on the 7th of April was reported to have slept none for the three preceding nights. A very perceptible fulness was now observed under the right clavicle, extending down over the pectoral muscle; the parts were tender to the touch, but not red. Mr. Carmichael now examined the hand and arm of the same side with much attention, for the purpose of ascertaining whether any wound or injury had existed, for the symptoms seemed to resemble closely those produced by poisoned wounds. None, however, could be detected. The restlessness now increased to an extraordinary height; during the following night the patient changed from one bed to another at least one hundred times, and the servants were incessantly employed in making and adjusting three beds, from one of which he wandered to another, impelled by an intolerable feeling of anxiety and uneasiness. During this period his bowels were free, his urine copious; and though his fever was considerable, it was by no means proportioned to the nervous excitement, nor was it accompanied by delirium or pain in the head. The swollen parts of the trunk were leeched freely twice, and diligently fomented, and continued to present the same appearance until the 10th, when a red patch appeared near the shoulder, subsequently spreading into

a vividly red erysipelatous blush, which occupied the skin covering the pectoral muscle and right axillary region. I saw him for the first time on the 11th. His pulse was 120, and by no means deficient in strength; skin hot, but covered with perspiration; he did not complain of headache, but was quite sleepless and excessively uneasy. His muscular strength was apparently not much reduced; and, indeed, until a few hours before his death, he was able to turn in bed with ease. His tongue was dry in the centre, and furred, but moist at the edges. The erysipelas was now spreading rapidly towards the left side, and down the front of the abdomen. An attempt was made, but in vain, to arrest its progress by the application of nitrate of silver to the skin around its margin—an operation which was performed with great care by Mr. Carmichael. Mercurial ointment was next applied to the inflamed surface; and, although the erysipelas continued to spread, we were led to entertain some hopes of our patient—having succeeded, by means of tartar emetic followed by opium, in procuring for him much, and, as he said, refreshing sleep. On the morning of the 13th, however, a black colour of the corium was observed in the situation of one of the bullæ on his left side. This alarmed us, and in a few hours afterwards our suspicions were confirmed by the appearances of dark maculae in many parts of the erysipelatous surface. These livid patches spread very rapidly, and were in some places accompanied by effusion beneath the cuticle, but in others they appeared to consist in a mere change of colour in the external surface of the erysipelatous corium, without any detachment of the epidermis. The patient took abundant nourishment, and got wine and cordials, but without any favourable effect. The scrotum now became engorged, and speedily assumed a gangrenous appearance. In some places the epidermis separated, and the gangrenous surface of the corium secreted sanies in large quantity, but in many parts no detachment of the cuticle took place. On the 14th, nearly the whole of the right side of the abdomen and the scrotum were superficially gangrenous, and the belly became tympanitic. During this time, apparently healthy faeces were discharged in considerable quantity; the skin was covered with perspiration; the urine was copious and natural; and we had here, what is worthy of notice, apparently healthy secretions from the bowels, liver, skin, and kidneys, co-existing with extensive gangrene of the surface. His tongue, however, continued dry and furred; his restlessness unabated; and the sleep previously procured by means of opium now ceased, although that medicine was repeated in the same doses. His pulse also began to sink, but he remained quite sensible and free from delirium until immediately before his death, which took place on the evening of the 15th. During the latter days of his illness, he had sweated copiously, and there was nothing remarkable in the odour of the perspiration. I may also observe that the pulse likewise furnished but very fallacious indications; for I can assert, with truth, that six hours before his death, though soft and

compressible, it still possessed a steadiness and a volume by no means calculated to impart a suspicion of his approaching dissolution. His strength was also such as would lead to an erroneous conception of his real danger; for, as I have before observed, he was able to turn in bed shortly before death. This observation is borne out by other cases, in which persons with extensive gangrenous erysipelas, and in imminent danger, have been known to be capable of walking about.

The evidently contagious nature of the erysipelas in this instance, and the youth and previously good health of the patient, render this case sufficiently remarkable. It is likewise worthy of notice, as proved by the circumstances, that the gangrene did not originate in the excessive violence of the cutaneous inflammation; for it did not appear in those portions of the skin which were primarily and most violently affected. On the contrary, we observed that the parts which became gangrenous had been paler and less tense than those which did not assume that condition, and that the portions of the skin which died were those which had become engaged at the latter stage of the disease. This is of importance; for, combined with other facts, it forms an obvious refutation of the opinion not long since maintained, that gangrene and sphacelus are in all inflammations the result of immoderate inflammatory action, and consequently to be averted by antiphlogistic treatment only. In many instances this opinion, and the treatment founded on it, are, no doubt, judicious; but that there are cases in which the gangrenous tendency supervenes on inflammation — or, in other words, is superadded to the inflammatory process, but independent of its intensity — no one will deny who candidly weighs the details of the case which I have just related, and recollects that the conclusions deducible from them have of late received too frequent a confirmation, from the rapidly fatal progress of putrid sore throat — a form of cynanche which has reappeared in Ireland, after having almost disappeared for upwards of twenty years. In both cases the disease appears to be infectious, and in both the gangrene seems to be quite independent of the intensity of the inflammation.

This is a question so important, in a practical point of view, that I shall make no apology for detaining you, as I am anxious to impress upon the minds of my younger auditors that there are certain forms of disease, termed inflammatory, in which the ordinary treatment by depletion is quite inadmissible. I shall, at my next Lecture, enter upon the treatment of fever, and endeavour to communicate such observations as a review of our cases for the last three months has afforded. And here I beg leave to return my thanks to the gentlemen who have furnished the cases, and to express the gratification I have felt in finding that so many of the pupils have recorded their facts in such a clear and satisfactory manner.

## LECTURE III.

Erysipelas in an epidemic form — Symmetrical spread of erysipelas on the body — Maculated fever, and Irish typhus — Dr. Lombard's remarks — Improved treatment of fever — Choice of a proper nurse and assistants — Air of the sick chamber — Necessity of attending to diet and nourishment.

I SHALL now resume the subject of erysipelas, which I alluded to in a cursory manner at our last meeting. You will recollect, I mentioned that we had a kind of epidemic erysipelas in our fever wards during the months of August, September, and October; this has now almost disappeared, for we have had but one case during the present month. The disease generally attacked the head, commencing in the scalp, or about the nose and cheeks; but in some cases it appeared first on the nape of the neck, particularly in those patients who had been blistered in that situation during the course of fever. The fever which now prevails seldom abates in less than fourteen or seventeen days; and it was generally about the termination of the febrile excitement, and while convalescence was going on, that the erysipelas appeared. Usually, on the fourth or fifth day of convalescence, a change was observed in the patient, and the erysipelatous attack commenced, being ushered in by a feeling of weakness and uneasiness, or an indistinct rigor, followed by quick pulse, headache, some increase of thirst, and in most cases by a marked change in the tongue, which became dry and parched. The inflammation was of a superficial character, expending itself almost exclusively on the external surface of the corium, and not affecting to any extent the subcutaneous cellular tissue.

You are aware that erysipelas becomes obstinate, complicated, and dangerous, in proportion as the inflammation spreads inwards. In such cases its characters are less distinctly marked, and it makes a near approach to a very formidable disease — diffuse inflammation of the cellular substance. The affection of which I am now speaking was generally simple, and in most cases limited to the superficial apparatus of the corium. It was characterised by the ordinary phenomena of true erysipelas, namely, redness, heat, a burning sensation, and slight elevation of the affected parts. There was seldom any remarkable degree of œdema, except in some cases where it attacked the eyelids; and we had no instance of abscesses forming under the skin. It was attended with a considerable degree of constitutional disturbance, and the fever generally continued for four or five days. On looking over the cases of this affection, which have been recorded by the gentlemen who had charge of the patients, I find that in most instances the fever terminated on the sixth day. In many cases a peculiarity was observed, to which I have alluded on a former occasion, namely, the spread of the erysipelatous redness in a perfectly symmetrical manner. I believe I

was the first who directed attention to the fact, that when erysipelas commences at any point of the mesial line of the body, it is very apt to spread in a symmetrical manner. Thus, in the present instance, the inflammation commenced in the majority of cases about the nose, and then extended in a perfectly symmetrical manner over the forehead and down the neck ; or when it appeared first on the nape of the neck, it travelled down between the shoulders with a very remarkable symmetry of extent and outline. Sometimes this precise correspondence did not exist ; but I can assert that in more than two-thirds of the cases it was extremely well marked. It appears, then, that this occurrence is not so very rare as my friend Dr. Johnson supposes. When I first noticed the fact of the occasionally symmetrical spread of erysipelas, he said it was an observation of very little importance, and that it was to be looked upon as a matter of mere curiosity, a phenomenon which a man would not see twice in the course of his life. I have, however, shown it to many of the students half-a-dozen times during the last two months.

The treatment of this affection, which was abundantly simple, and the same in every instance, was entirely regulated by the circumstances under which the erysipelatous attack occurred. No local treatment was employed, nor was any required. It was not necessary to apply leeches, cold lotions, fomentations, or mercurial ointments. The cutaneous inflammation was not either very extensive or intense ; and the constitutions of the patients did not admit of any kind of depletion. The internal treatment was determined on, more from a consideration of the circumstances under which the disease had appeared, than from an accurate analysis of the symptoms, or from any preconceived opinions of the nature of the complaint. In the practice of your profession you will be frequently called upon to treat affections, in which you will have to consider not only the existing symptoms, but also the circumstances under which they have originated ; and in many instances you will find that your treatment will be determined more by the latter than the former. Here we had a number of patients labouring under erysipelas, at a period when the system was reduced by fever, and the powers of life at a very low ebb. No one could think of using antiphlogistic or depletory measures under such circumstances. Recollecting that our patients had just emerged from a dangerous disease, we adopted a very different mode of treatment ; and in all cases, except where the patient's strength was unbroken, the fever high, and the local symptoms of an intense character, we had recourse at once to tonics, narcotics, and stimulants. We first gave an emollient injection, and then administered sulphate of quinine in the form of enema, to the amount of from five to ten grains, blended with mucilage of starch. This was administered twice a day, and the patient was directed to take small quantities of wine and light nourishment.

Many of the pupils at the time were surprised at this mode of

treatment. From the dry state of the tongue, the occasional delirium, the restlessness, and the headache present, they were inclined to think that the patients would be injured rather than served, by dietetic and medicinal stimulants of this description. I had, however, witnessed cases of a similar description, and had observed the tongue become clean and moist, the skin soft and cool, the thirst, fever and restlessness subside, and the local symptoms disappear under the use of wine. In this instance, also the value of our mode of treatment was borne out by the result; for, with the exception of a single case, all our patients recovered. In one instance the disease assumed a malignant form, and carried off the patient in a few hours. She was a young girl of apparently vigorous constitution, and who had got tolerably well through a dangerous maculated fever: towards the middle of the fever she had exhibited symptoms of cerebral excitement, for which we deemed it necessary to blister the scalp. At the time when the erysipelatous attack came on, she had been for several days ill, and was in that low state in which the skin has a great tendency to become ecchymosed, and form bad sores. This tendency I have observed in many instances of low fever, and it is a condition which is always pregnant with danger. The occurrence of ecchymosis, excoriation, and superficial gangrene, in such cases, is not so much the result of pressure, as of the general debility, and the impaired condition of the fluids and solids of the body. It was in this state of the system, and with her scalp still suffering under the inflammation produced by the blister, that this poor girl was attacked with erysipelas of the face. Unfortunately, at the time the erysipelas attacked the sound skin of the head, the blistered surface was attacked with gangrene; and two dangerous local affections became thus suddenly conjoined. Under this unfavourable complication her constitution sank with great rapidity, and she died in twenty-four hours from the commencement of the attack.

I shall now, in pursuance of my intention, proceed to speak of the treatment of fever. I may observe here, that we are now at a point of time possessing no common interest for the reflection of medical observers. It is now nearly two years since my attention was first arrested by the appearance of maculated fever, of which the first examples were observed in some hospital patients from the neighbourhood of Kingstown. This form of fever has lasted ever since, prevailing universally, as it had banished all other forms of fever, and being almost the only type noticed in our wards. Within the last four days, however, a change appears to have taken place. Scarcely any cases of maculated fever have been admitted within the last fortnight, and the majority of fever patients at present under treatment are free from the cutaneous eruption so frequently observed during the last two years. The cases which we have recently admitted present no spots, or maculæ, and have been termed, perhaps improperly, simple typhoid fever. And here permit me to observe, that it would be very wrong to conclude, from

this circumstance, that our recent cases are of a more favourable description than those which preceded them; the disease, it is true, appears to have lost a character which is always looked upon as bad and unfavourable, but it may be just as dangerous a modification of fever as the eruptive typhus. During the predominance of the latter form, all cases without maculæ were in general simple and free from danger; but it is probable that this is not the case at present. There are two cases of this non-maculated typhus in the female ward, which are of an extremely doubtful character, and in which it would be difficult to predict the result. Indeed, were I to make any prognosis, I should say that the chances, if not against them, are at least very fairly balanced.

Now, gentlemen, as it appears we have come to a change, and that we may have to treat a new modification of fever, it behoves us to be extremely vigilant. I invite you to watch and study, with the closest attention, the cases of fever which come before you. Let us, in the first place, endeavour to ascertain whether we have seen the close of one epidemic, and are now at the commencement of another. The number of cases of simple typhoid fever have, you perceive, increased in a very remarkable manner, and the number of cases of eruptive typhus have become remarkably scarce. But there is another and a more important reason why we should study these cases with all due diligence and attention. They may be the first examples of a new epidemic, and every new epidemic, as it has its peculiar characters, so has it its peculiar treatment. We cannot follow the same track which we have pursued for the last two years—we cannot apply our remedies with the confidence of experience—we must now strike into a new path, and for some time our practice must be tentative and experimental. It was only after a good deal of experimental observation that we were able to arrive at a plan of treatment adapted to meet the exigencies of the maculated form of fever; and it is very probable that this new fever may prove at first extremely difficult to manage; and it may be some time before the diminished rate of mortality will show that we have at length discovered its true character, and the remedies best calculated to arrest its progress.\*

Let me now direct your attention to some practical points connected with the treatment of the maculated fever which has prevailed for the last two years, and which has spread to a very considerable extent in this city and its environs, attacking alike the upper, middle, and lower classes of society. It is not my intention to enter into a detailed history of the origin and progress of this fever, its varieties, symptoms, and pathological phenomena; my purpose is to furnish you with a brief but comprehensive outline of its treatment, and of the remedies which have been found most successful in its removal, as well as the most appropriate time and

\* Since this lecture was delivered, many cases of typhus without maculæ have been admitted, but the maculated form of fever still continues very common.

mode of their application. But as many of the students are unacquainted with this form of fever, I shall premise by observing that it is the same fever which has been frequently observed in this country, and of which a full account has been given in the Report published by Dr. Cheyne and Dr. Barker. You will also find a sketch of its principal characters in one of my lectures, published in the 172d No. of the London Medical and Surgical Journal for May, 1835. It is generally insidious in its first attack, and the symptoms are by no means proportioned to the subsequent danger. From the third or fourth to the seventh day, generally about the latter period, an eruption of dark-red spots appears on the skin in various parts of the body. Towards the latter stage, this fever is characterised by great nervous derangement, either with or without symptoms of cerebral congestion. It rarely lasts less than fourteen or seventeen days, and very seldom terminates by a well-defined crisis. It has spread extensively through this country, and has been observed at Liverpool, Glasgow, Birmingham, Manchester, Edinburgh, and London. In this country it has been for many years the prevailing type, and, although its spread as an epidemic may have been checked, and its course interrupted, by the occurrence of other diseases, it is always found in this country, and prevails in a distinct form. It may originate spontaneously, or from contagion. From what I have seen of it, I have no doubt of its double origin. I am also inclined to think that it never attacks the same individual more than once, and that when a man has had the true maculated fever, he never gets it again. In this point, as well as in the eruption, it bears a close analogy to the exanthemata. It is so much more common in Ireland than in any other country of Europe, that my friend, Dr. Lombard, of Geneva, calls it the Irish typhus. Whether it be from the moisture of our climate, or from the poverty and wretchedness of the people, I know not; but it is a fact that typhus is more prevalent in this country than in any other European nation. This may be easily seen by comparing the proportion of fever patients treated in the hospitals of the various capital cities, with the number treated in the same way in Dublin. Dr. Lombard also states, that the British towns which have most intercourse with this country, have more of this fever than those which are more remote, or have less intercourse with us. Thus there is more maculated fever seen in Liverpool and Glasgow, than in Edinburgh, Birmingham, or London. He looks upon it as a fever peculiarly Irish, originating in this country as an endemic, from causes the nature of which are not well understood: and that when it appears in English or Scottish towns, it is the result of contagion imported from Ireland. You will find some very interesting obvervations on this subject in his papers, published in the 28th number of the Dublin Medical Journal.

In the fever of which I speak, there is nothing which would lead to the conclusion that the disease arose from inflammation. Many persons have regarded fever as produced by inflammatory affections

of some organ or system of the body, and have asserted that it is in every instance preceded and accompanied by some form of local inflammation. One class of pathologists have placed the seat of this inflammation in the brain, another and a more numerous class in the digestive system; and all have believed that inflammatory action, whether limited to one or more organs, is the cause of fever. No opinion can be more unfounded, so far as typhus is concerned. Local congestion and inflammations may and do frequently arise in fever, but they are merely superadded to it, and form no part of its essence. I have now witnessed many cases in which fever ran through its course to a fatal termination without any distinct evidence of local inflammation or even congestion; and I have dissected numerous cases of fever in which there was not any appreciable trace of inflammatory action in the organs of the three great cavities.

Having made these general observations, I may observe, in addition, that in the whole range of human maladies there is no disease of such surpassing interest and importance as fever; and I cannot dwell too much on the necessity of your applying most attentively to the study of its pathology and treatment. If you compare the mortality from fever with that resulting from any other disease in this country, you will be struck with the overwhelming fatality of this affection, and will readily admit the inestimable value of a thorough knowledge of its nature and treatment. Recollect, too, that fever is a disease which numbers among its victims persons chiefly in the prime of life, and during the most active and useful stage of existence,—fathers and mothers, persons who are the ornament or the stay and support of their families, the intellectual, the industrious, the efficient,—those whose lives are most valuable to their friends and to society. This gives an additional interest to the study of fever, and should stimulate you to endeavour to arrive at a correct knowledge of its nature and treatment. And here let me observe, that there is nothing more untrue than the assertion, that the treatment of fever is a matter of indifference. It has been the custom to look upon every plan of treating fever as idle and absurd, and until very lately there were many persons in this country who believed that patients recovered, not from having had the advantage of treatment, but from goodness of constitution or some favourable accident; and it was usual with such persons to appeal to the experience of Dr. Rutty, who, in recording the history of the epidemics of his own time, observes, that the mortality was greatest among those who were best attended to, and that those who were left to God's providence, and got nothing but cold water, recovered. And, indeed, I must admit that the treatment of some of the cases of fever which I witnessed when a student, would seem to justify the quaint and sarcastic observation of Dr. Rutty. At that period, whether it was from bad treatment, or from what has been termed the *nimia diligentia medici*, it is a fact that the maximum of mortality was among the rich, and that those who

were most attended to died most speedily. In the epidemics of 1816, 1817, 1818, and 1819, it was found by accurate computation, that the rate of mortality was much higher among the rich than among the poor.\* This was a startling fact, and a thousand different explanations of it were given at the time; but I am inclined to think that the true explanation was, that the poor did not get so much medicine, and that in them the *vis medicatrix* had more fair play. I could appeal to the practice of those times in proof of this opinion, and as we go along I shall have an opportunity of alluding to this part of the subject again, and contrasting the practice of the present day with that which was generally followed thirty years ago. If you look to Dr. Cheyne and Dr. Barker's Synopsis of the plan of treatment employed by the physicians of those days, you will be prepared, from a mere inspection of it, to admit, that it was at least as hard to escape the physician as the disease. Since that period our practice has greatly improved, and things are much changed; the preponderance of fatal cases is now to be found among the poor, and the mortality among the rich, or those who have proper medical advice from the commencement, is not one-third of that which is found among the indigent, who are generally neglected at the commencement of the disease. I am therefore fully prepared to deny that, in the present state of medical knowledge, our practice is a matter of indifference; on the contrary, there is no disease in which diligent attention and skilful treatment are more frequently successful than in fever, nor is there any affection of equal importance in which our therapeutic means are more efficient and valuable.

Now, when called on to treat a case of fever, there are several things which require your attention. In the first place, you should examine the state of the family arrangements. This is a matter which men are apt to overlook or treat as a matter of indifference, but in my mind it is of no ordinary importance, and should always be attended to. You should never, if possible, undertake the treatment of a case of fever where the friends or relations of the patient supply the place of a regular fever nurse. The mistaken tenderness of relatives, and their want of due firmness, presence of mind, and experience, will frequently counteract your exertions and mar your best efforts. Affection and sorrow cloud the judgment, and hence it is that very few medical men ever undertake the treatment of dangerous illness in the members of their own families. The sympathy which a nurse should have for her patient should be grounded on a general anxiety to serve, and a strict sense of duty, as well as a laudable desire of increasing her own reputation; it

\* [It is true that in ordinary cases of typhus the treatment must be extremely simple; the mildest measures which do not disturb the course of the fever, but merely aid the curative powers of nature by removing the symptoms which are unusually severe, are the best. Any violent disturbing means are positively mischievous. This is nothing but the expression of a general law, which is applicable to all continued fevers attended with a cutaneous exanthema.—*Ed.*]

is, in fact, a sympathy analogous to that which a physician should have. Again, it will not do to have a nurse who has been usually employed in other diseases; your assistant must be a regular fever nurse, and the man who undertakes the treatment of a long and dangerous case of fever without such an assistant, will often have cause to regret. I could mention to you many cases illustrative of the truth of this assertion. I could tell you, that where I have permitted the continuance of the services of one of the family, or of a common nurse, I have been almost invariably annoyed and disappointed. I now make it a general rule to refuse attending any dangerous and protracted case of fever without a properly qualified nurse.

In the next place, when treating a case of bad typhus, do not think that it will be sufficient to see your patient once a day. But you will say, perhaps, that our hospital patients here do very well, and yet they are visited only once in the twenty-four hours. True — but then we have experienced nurses to look after them at all hours; we have the valuable surveillance of our apothecary, Mr. Parr; we have the attendance of the resident pupils, and of the gentlemen who take charge of the cases. You see, then, that they do not depend on a solitary visit. How often has Mr. Parr, the resident pupil, found it necessary to change the treatment adopted at the morning visit? How often have the remedies of which we had only given a hint in the morning, been actually and energetically employed before the close of the day; and how often have lives been saved by the valuable attentions to which I have just alluded? No one should attend a case of fever without having proper medical assistants. My practice, in general, is to visit my fever patients two or three times a day; and, when I have a bad or a dangerous case to manage, I always have a competent medical assistant to stay by the patient and watch every change of his malady. I do not know how they manage this matter elsewhere, but in this city we have so many zealous intelligent students, so many young medical friends, and so many well-educated apothecaries, that we are never at a loss for an assistant. This fact is, I think, a sufficient answer to the objections put forward by Dr. Johnson, in the last number of the Medico-Chirurgical Review. He says that tartar emetic is a two-edged sword — an agent powerful alike for good or evil, and in the administration of which no ordinary circumspection is demanded. All this I am willing to admit; there is no remedy capable of producing more mischief when abused, but when properly watched it is, I am confident, the means of saving many valuable lives. He says, also, that Dr. Graves cannot give that share of attention to his patients which the employment of such a remedy demands. He is quite mistaken on this point. I am never at a loss for some skilful person to remain with the patient, watch the operation of each dose, and modify or change it according to circumstances. The want of proper

assistants may be an objection to the administration of tartar emetic, but this objection does not hold good with respect to Dublin.

One or two more observations of a general nature. Some persons have such a terror of foul air, in cases of fever, that you will find all the windows in the house thrown open, not even excepting those of the patient's bed-chamber, and wherever you turn you are sure to meet with a current of air. Now, this is an unnecessary practice, likely to entail disease on the family and local inflammation on the patient. The bed-room of a patient labouring under fever should be well aired, but without what is termed thorough air; and it should, if possible, be a quiet back room, away from the street. In the next place, it should be sufficiently large to hold two bedsteads conveniently; and you should order the attendants to have two well-aired beds in readiness, from one of which the patient should be changed to the other every twelve or twenty-four hours. You can scarcely have an idea of the comfort this affords to a person in fever. The room can be kept properly ventilated by a fire, and the temperature can be regulated by a thermometer. Some persons are in the habit of constantly sprinkling the room with vinegar — others with the chlorides. I do not know that it is necessary, and I think the use of chlorine is doubtful, if not improper, and may prove injurious to the patient.

Having made these few general observations on the steps to be taken by those who enter on the treatment of typhus, I shall now proceed to speak of diet and medicines. In a disease like fever, which lasts frequently for fourteen, twenty-one, or more days, the consideration of diet and nutriment is a matter of importance, and I am persuaded that this is a point on which much error has prevailed. I am convinced that the starving system has, in many instances, been carried to a dangerous excess, and that many persons have fallen victims to prolonged abstinence in fever. This was one of the errors which sprung from the doctrines of those who maintained that fever depended on general or topical inflammation. They supposed that fever arose from inflammation, and immediately concluded that, to treat it successfully, it was necessary to reduce the system by depletion and low diet, and to keep it at this point during the whole course of the disease. Hence the strict regimen — the *dîète absolue* — of the disciples of the physiological school, and of those who looked on inflammation as the essence of fever. The more the symptoms appeared indicative of inflammatory action, the more rigorous was the abstinence enforced. If a patient's face was flushed, or his eyes suffused, no matter what the stage of the fever was, they said, "here is inflammation of the brain, and nourishment will exasperate it." If he had red or dry tongue, and abdominal tenderness, they immediately inferred the existence of gastro-enteritis, and all kinds of food, even the lightest, were strictly forbidden. That this proceeds from false notions on the nature of fever is beyond doubt, and I pointed out this fact many years ago, long before the appearance of Piorry's work. Let

us, in the first place, examine the results of protracted abstinence in the healthy state of the system. Take a healthy person and deprive him of food, and what is the consequence? First, hunger, which after some time goes away, and then returns again. After two or three days, the sensation assumes a morbid character, and, instead of being a simple feeling of want and a desire for food, it becomes a disordered craving, attended with dragging pain in the stomach, burning thirst, and some time afterwards epigastric tenderness, fever, and delirium. Here we have the supervention of gastric disease, and inflammation of the brain, as the results of protracted starvation. Now, these are in themselves very singular facts, and well deserving of being held in memory. Read the accounts of those who perished from starvation after the wreck of the Medusa and the Alceste, and you will be struck with the horrible consequences of protracted hunger. You will find that most of the unhappy sufferers were raging maniacs, and exhibited symptoms of violent cerebral irritation. Now, in a patient labouring under the effects of fever and protracted abstinence — whose sensibilities are blunted, and whose functions are deranged — it is not at all improbable that such a person, perhaps also suffering from delirium or stupor, will not call for food, though requiring it; and that if you do not press it on him, and give it as medicine, symptoms like those which arise from starvation in the healthy subject may supervene, and you may have gastro-enteric inflammation, or cerebral disease, as the consequence of protracted abstinence. You may, perhaps, think that it is unnecessary to give food, as the patient appears to have no appetite, and does not care for it. You might as well think of allowing the urine to accumulate in the bladder, because the patient feels no desire to pass it. You are called on to interfere where the sensibility is impaired, and the natural appetite is dormant; and you are not to permit your patient to encounter the horrible consequences of inanition, because he does not ask for nutriment. I never do so. After the third or fourth day of fever, I always prescribe mild nourishment, and this is steadily and perseveringly continued through the whole course of the disease.

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#### LECTURE IV.

General treatment of fever — Dietetic management — The starvation system may produce organic disease — Proper food for fever patients and convalescents — Allaying of thirst — Sedatives — Expergescents — Efficacy of green tea in a case of narcotism — Flagellation effectual in a case of poisoning with opium.

At my last lecture I spoke of some preparatory steps which should be taken before you enter on the treatment of a case of fever. I stated that one of the most essential requisites was a good nurse; that you can readily find persons to undertake this office in every family, but that it is rare to meet with any individual among the

patient's relatives properly qualified to discharge so important a duty. There is a vast difference between readiness to undertake and ability to perform. Some persons are always doing, but never do right; always attempting, but never successful. There are many nurses who are extremely attentive, but inexpert and injudicious, and their ill-judged attentions are frequently prejudicial to the patient. A fever nurse has a vast deal in her power; if an enema is to be administered, the patient will be much less disturbed and annoyed than if it were given by an unskilful person. The mere handling of a patient — the moving of him from one bed to another — the simple act of giving him medicine or drink — the changing of his sheets and linen — the dressing of his blisters — and a thousand other offices, can be performed with advantage only by an experienced nurse. Always bear in mind that it is of the utmost importance to economise the patient's strength in fever. The very act of lifting him up, or moving him from one side to another, tends to produce exhaustion. In the advanced stages of fever, the services of a properly qualified nurse are inestimable. Then there is the moral management of the patient, and this is an office which no one can undertake unless qualified by experience, and a correct knowledge of the habits of persons labouring under such forms of disease. Every one admits the value of moral superintendence in the treatment of the insane. Now there are very few patients who are not in a state analogous to insanity, for a longer or shorter period, during a course of typhus fever. There is a necessity for moral management in fever as well as in insanity, and this is understood only by an experienced nurse. Friends and relatives are seldom found capable of discharging this office. If they chance to discover from the physician's remarks, or questions, the weak points of the patient's case, they generally contrive to let him know them in some way or other. If the patient is restless, for instance, the ill-judged anxiety of his friends will most certainly prevent him from sleeping. They steal softly to his bed, draw the curtains, move the candle so as to make the light fall on his eyes, and wake him perhaps at the moment he is settling down to rest. If he happens to take an opiate, and that they are aware of the nature of his medicine, they inform him of it, and his anxiety for sleep, conjoined with their inquiries, prevent its due operation. Hence, when you prescribe an opiate, you should not, in many cases, say anything about it; and it should not be administered in such a way as to lead the patient or his friends to expect any decided benefit from it. It is only where I have to deal with prudent persons that I break through my rule of concealing both the nature of the medicine and the results which I expect from its operation. One of the best ways of giving an opiate is to administer it in the form of an enema. The patient's attention is then turned away from the consideration of loss of rest — he supposes that the enema is to act on his bowels, and in expecting a motion he drops asleep. You will, often, too, succeed in producing sleep in this way, where you would fail in.

bringing it on by an opiate administered by the mouth. Another recommendation attached to this mode of exhibiting opiates is, that it can be employed in cases of delirium, where the patient obstinately refuses to swallow any kind of medicine. Let me give you here another caution. Do not let the patient know the situation or extent of his danger, however you may feel bound to act in reference to these matters towards his relatives or friends. If you apprehend mischief in the brain, do not commence by examining the head, or putting your questions in such a manner as to lead him to suspect the seat and nature of the affection. The same remark may be applied to the examination of the thorax and abdomen.

At my last lecture I endeavoured to impress upon you the fact that there can be no doubt that persons have been occasionally starved to death in fever; and laid before you some remarkable facts connected with the influence of protracted abstinence on the general system, as well as on the brain and digestive tube. I endeavoured to show that long-continued denial or want of food generates symptoms bearing a very close resemblance to those which are observed in the worst forms of typhus. Pain of the stomach, epigastric tenderness, thirst, vomiting, determination of blood to the brain, suffusion of the eyes, headache, sleeplessness, and, finally, furious delirium, are the symptoms of protracted abstinence; and to these we may add, tendency to putrefaction of the animal tissues, chiefly shown by the spontaneous occurrence of gangrene of the lungs. It has been shown by M. Guislain, physician to the hospital for the insane, at Gand, that in many instances gangrene of the lungs has occurred in insane patients who have obstinately refused to take food. Out of thirteen patients who died of inanition, nine had gangrene of the lungs. You perceive, then, that starvation may give rise to symptoms of gastric disease, to symptoms of cerebral derangement, and to mortification of the pulmonary tissue. It is not, therefore, wrong to suppose that when a system of rigorous abstinence has been observed in fever, and when food has been too long withheld, because, forsooth, the patient does not call for it, and because his natural sensibilities are blunted and impaired — it is not, I say, unreasonable to suppose that gastric, cerebral, and even pulmonary symptoms may supervene, analogous to those which result from actual starvation.

An attentive consideration of the foregoing arguments has led me, in the treatment of long fevers, to adopt the advice of a country physician of great shrewdness, who advised me never to let my patients die of starvation. If I have more success than others in the treatment of fever, I think it is owing in a great degree to the adoption of this advice. I must however, observe, that great discrimination is required in the choice of food. Although you will not let your patients starve, do not fall into the opposite extreme: you must take care not to overload the stomach. When this is done, gastro-enteric irritation, tympanitis, inflammation, and exas-

perated febrile action, are the consequences. I have witnessed many instances of the danger of repletion in febrile diseases. A case of this kind occurred some time back in this hospital, in a boy who was recovering from peritonitis. In another case, in private practice, an incautious indulgence in the use of animal food was followed by a fatal result. A young lady ate some beefsteak, contrary to my orders, at an early period of convalescence from fever, relapsed almost immediately, and died in thirty-six hours. Food must be given with great care and judgment, particularly in the beginning of fever. For the first three or four days, particularly if the patient is young and robust, water, weak barley water, and whey, will be sufficient. After this I am in the habit of beginning with some mild nutriment. What I generally give is some well boiled gruel, made of groats, and flavoured, if there be no tendency to diarrhoea, with sugar and a small quantity of lemon juice. The ordinary oatmeal gruel does not answer sufficiently well for this purpose, for it is apt to produce griping and diarrhoea, symptoms which are extremely disagreeable in the commencement of fever, and which often lead to others of a more troublesome and formidable character. I am also much in the habit of giving a little thin panado, morning and evening, during the latter part of the first, and the beginning of the middle stage of fever. A small slice of bread is slightly toasted, and boiling water is poured on a tablespoonful of the crumbs, in sufficient quantity to make a thin panado, of which the patient takes a tablespoonful two or three times a day. It may be flavoured with a very small quantity of lemon juice and sugar, if there is no tendency to diarrhoea ; but where this exists, or where you are administering mercurials, I think you should be cautious in the use of acids. Although medical men are of late rather less cautious in giving acids during the use of mercurials, I think the practice is not entirely devoid of danger, and I think our predecessors were right in withholding them under such circumstances. You will begin, then, on the third, fourth, or fifth day, according to circumstances, with a little gruel ; and after two or three days you may add a little panado, giving, as I have already observed, a spoonful of either every third hour. As the fever advances you may add some mild animal jelly or broth ; and one of the best kinds of nutriment in the middle and latter stages of fever, is chicken broth. I do not speak here of chicken water ; I mean good and well made chicken broth. Give this, but give it in small quantities, and with great caution at first. Watch the effects of the few first spoonfuls ; it may act injuriously, and you should give it up, at least for some time, if it produces any bad effects. If it brings on heaviness, sickness of stomach, flushing of the face, excitement of pulse, and increased feverishness, give it up, and return for some time to the gruel and panado. You can try it again in a day or two ; for although your patient does not bear it to-day, he may to-morrow or the day after ; and it is a most fortunate circumstance when it agrees with him, for, as I have

already observed, it is the best kind of nutriment you can give in the middle and latter stages of fever. The best mode of giving it is to make the patient take a tablespoonful of it regularly every third hour, or oftener if necessary.

Recollecting the tendency to diarrhoea and intestinal irritation in fever, you will be extremely cautious in allowing your patient the use of fruits. Indulging patients in the use of grapes and oranges is a very popular, but, in my mind, very hazardous and improper custom. I have on many occasions seen persons injured by fruits of this description. Stewed and roasted apples are still more dangerous; they are apt to produce tormina, flatulence, diarrhoea, and intestinal inflammation. All acid or raw fruits have a tendency to produce irritation of the stomach and bowels, and should be avoided altogether or very sparingly used.

One general observation as to the administration of food and nutriment in fever. All kinds of food and nutriment should be given by day, and the patient should, if possible, be restricted to the use of fluids by night. The natural habit is to take food by day and not by night, and in sickness, as well as in health, we should observe the natural habits of the economy. With respect to drinks, the mildest, of course, should be preferred: on this point most persons are generally agreed, and it will be unnecessary for me to detain you with any particular observations. There is one error, however, which is very frequently committed in the use of drinks in fever; patients are generally allowed to drink too much. It may be urged that they have a strong desire for fluids; but they should not be gratified in everything they wish for. They labour under a constant state of nervous irritation and restlessness, and will beg of you to do twenty different things to relieve their immediate feelings; but it would be just as improper to give them large quantities of drink every time they desire or call for it, as to indulge them in any momentary whim which may be the offspring of their disordered and changeable fancy. The continued swilling of even the most innocent fluids will bring on heaviness of stomach, nausea, pain, and flatulence, and predisposes to congestion and intestinal irritation. From the mere ingesting of a large quantity of the simplest fluid, you will frequently see well-marked symptoms of gastric irritation arise during the course of fever. This is not a picture drawn from imagination; I have witnessed it on many occasions during the course of my practice. It is extremely painful, indeed, to be obliged to refuse drink to a patient labouring under intense thirst; but you should never allow them to take a large quantity of fluid at a time: you should impress upon them the danger attendant on such a practice, and tell them that a spoonful or two, swallowed slowly, allays thirst more effectually than drinking a pint at a time. The sensation of thirst, as you all know, is almost entirely confined to the fauces and upper part of the pharynx, and it is as much relieved by a small quantity swallowed slowly and gradually, as by a large quantity gulped down at once.

Besides the simple fluids, there are other drinks required in fever. Beer, ale, porter, wine, tea, and coffee, are also frequently used in the treatment of fever, and are of the utmost value when employed on appropriate occasions; they are adjuvants of the highest importance in the dietetic management of fever, and it will require some time to explain the rules by which you should be guided in their administration. I shall, therefore, speak of them according to the indications with which they are given; and, first, of tea and coffee. You are aware that we are constantly in the habit of ordering medicines to diminish nervous irritation or restlessness, and to procure sleep; but I believe we are not much in the habit of prescribing remedies which produce an opposite state of the system. We give sedatives and narcotics to tranquillise, to produce a species of exhaustion of the mental faculties, and to bring on sleep; and I do not see any reason why we should not also administer expegefacients, or remedies calculated to maintain intellectual activity, and keep the patient awake. Among those remedies which are most frequently employed for the latter purpose, are tea and coffee. You have lately seen the use we made of an infusion of green tea, in a case of narcotism which occurred in the fever ward. A man who was in the latter stage of fever, and labouring under great nervous excitement and total loss of sleep, was ordered an opiate enema, after we had tried various other means without success. During the course of the evening he got twelve drops of black drop, with two ounces of mucilage of starch, in the form of enema, and soon after fell into a sound sleep. When we came next morning and inquired after him, everything was reported to have gone on well; the opiate enema had answered the purpose completely, and the man was still sleeping soundly. We found, however, on a more accurate examination, that he was in a kind of lethargic state, and could scarcely be roused. When addressed in a loud tone of voice, he raised himself heavily and slowly, half opened his eyes, gave a brief answer to our questions, and then, leaning back on his pillow, dropped asleep. Observe here the danger connected with this state. He was in an advanced stage of fever, had been restless and sleepless, and had suddenly passed to an opposite state. The rapidity with which coma had supervened on sleeplessness, and the danger of fatal congestion of the brain coming on, gave me considerable alarm. There was no use, however, in thinking of what had been done; the man's state called for prompt and decided measures, and we proceeded at once to attack the symptoms of our own creation. One of the gentlemen went down and got some green tea, of which he made a strong infusion, and administered a strong dose of it to the patient. This had the desired effect; the symptoms of coma gradually disappeared, and when I came to see him in the afternoon, he was quite out of danger. Green tea was first introduced here as an expegefacient in the treatment of coma by Dr. Edward Percival, son to Dr. Percival of Manchester; and some years back he read a paper at a meeting

of the College of Physicians, in which he brought forward several cases of coma and stupor, in which green tea had produced the most favourable effects. On the continent they generally use strong coffee for the same purpose. Whether these beverages produce this effect by their influence on the circulation, or on the nervous system, I am not prepared to say; but there cannot be a doubt of their efficacy and value in many cases of this description; and I am frequently in the habit of using both with this intention.

While on the subject of expergesfacients, I shall beg leave to read for you a very curious case from the 13th number of the Boston Medical and Surgical Journal, in which an expergesfacient of a less agreeable character was employed to rouse a patient from the lethargic stupor brought on by a large dose of laudanum. There are some transatlantic peculiarities of expression in the detail of this case, but I have no doubt of its being correct. It is entitled "a case of successful treatment by flagellation, where a large dose of laudanum had been taken." And the author, Dr. Joseph Barrett, of Middletown, Connecticut, proceeds as follows:—

"Tincture of opium is not unfrequently resorted to for destructive purposes. It is also, unfortunately, and too frequently, taken by mistake, and proves fatal before efficient means can be adopted to counteract its deleterious effects on the system. I am induced, therefore, to offer a short statement of a case of poisoning with laudanum that fell under my care several years since, for the following reasons: first, the success that attended the mode pursued, and, secondly, from not having met with any such means recorded, to my knowledge,\* either in works on medicine, or in treatises on poisons.

Observe, it is not I that am speaking here, but Dr. Barrett, of Middletown, Connecticut.

"In the year 1822, February 23d, I was called on to see Mr. Wright Harris, (this was in the state of New York,) who had intentionally taken a large dose of laudanum for the purpose of destroying himself. He had committed this act during his absence from home, under circumstances which it is not important to relate. Much time, about three hours, was, therefore, lost, before any effectual measures could be adopted for his relief. His case, as I found him, appeared to be altogether hopeless. Before my arrival, emetics and various drinks had been tried, besides frictions, and constant, though ineffectual attempts, had been made to irritate the oesophagus by feathers. All these means had failed, and the patient was in such a profound sopor, that apparently nothing but warmth remained to indicate that life had not already become extinct. The quantity of laudanum taken was ascertained to be one ounce and a half. The case appearing so desperate, justified me in the course of treatment which I was, under existing circumstances, then obliged to adopt.

\* This practice, though not generally adopted, has been recommended by several authors in Europe.

"Internal remedies having entirely failed, there was no chance left but for high external excitements. I therefore determined to use vigorous measures. I commenced with flagellations, using long, pliant, fresh twigs to the palms of the hands and soles of the feet. These were briskly applied, and in a short time gave indications of uneasiness and pain. This treatment was unremittingly pursued till the man spoke, and complained of being pained by the whipping, when this severe appliance was relaxed; but on so doing, he instantly sunk into a profound stupor, from which he was again only roused by the severity of the whipping. It required the aid of a number of men to take turns in the flagellation, as well as to support and walk him about; for a cessation of the use of the rods was followed by instantaneous stupor. After about six or eight hours under this course, the stupor was lessened, and the severity of the flagellation mitigated: but as the case required constant high excitement, it was still repeated at intervals, till eventually the exercise of walking was sufficient to keep him awake. This was in about twelve hours from the commencing with the flagellation. He afterwards experienced but little inconvenience from his hands and feet, and was perfectly restored in a few days to his usual health. I would here state that the first proposal made by me to adopt flagellation, as the only hope, was objected to by the persons present, from its carrying with it the semblance of unkindness towards what was regarded by them as a corpse; and it was not till the application of the rods by myself, in the first instance, that I obtained the aid of those present; but as soon as the patient began to move, and at last spoke, they took hold with alacrity, and by dividing themselves into relief parties, they very cheerfully, and rather amusingly, kept up the castigation so long as the state of the patient required it at their hands. He by no means seemed to relish this harsh proceeding, and in return gave his attendants several severe blows. If while lifting his arm to give a blow, the flagellation was then entirely suspended, the arm would instantly sink powerless; to such a degree had the effects of the narcotic drug prevailed over the nervous system, that nothing but the torture of the rods could rouse him. On his recovery, it was said that the man's wife was highly satisfied with this remedial course, which was believed to have a good effect upon his subsequent conduct."

## LECTURE V.

Treatment of typhus fever—Tympanites often the consequence of inattention to diet, or to overdosing with purgatives—Thirst in fever frequently dependent on the state of some internal organ—Blisters, employed as stimulants or evacuants, excite the vital action of the capillaries—an important remedy where cerebral affection is apprehended—Signs of approaching cerebral symptoms—Tartar emetic solution, and ointment—The latter used with success in some desperate cases.

BEFORE I proceed to speak of the diet and remedies to be employed in the treatment of typhus, allow me to make a few observations. There is a patient at present in the fever ward, whose case shows the necessity of strict attention and incessant watchfulness on the part of those who have the management of bad cases of fever. A man who has been labouring under delirium, with symptoms of cerebral excitement and congestion, was ordered the tartar emetic solution, with the view of reducing the increased vascular action; but on inquiry this morning, we find that he has taken no medicine, and that his symptoms have been allowed to go on unchecked for twenty-four hours. He refused to take his medicine, and the nurse very improperly neglected to report the circumstances of the case, in order that proper steps might be taken to remedy so dangerous an omission. Thus a whole day has been lost at a most critical and important period of fever. There can be no excuse for such negligence as this, for it could be easily remedied. Patients in this state have always more or less thirst, and a spoonful of the tartar emetic solution could be mixed with whey or cold water, and administered in this way without his knowledge, or if he refused to drink any fluid, it might be given in the form of enema. There is no excuse, therefore, for such negligence; and when you recollect the state that such patients are in—their nervous excitement, incessant raving, agitation, struggling, and sleeplessness—you will be able to appreciate the dangerous, and even fatal, consequences that may arise from culpable neglect of this kind.

At our last meeting I spoke of the use of food and drink, and laid before you my views of the most appropriate articles of diet in the various stages of the fever. I told you that I attributed much importance to the use of a proper regimen, and that I looked upon the observance of this principle as a main cause of success in the treatment of typhus. I think it is chiefly owing to our care in this respect, that so few of our patient have tympanites. Now and then we have cases of fever with tympanites and diarrhoea, but in the majority of instances, these are persons who have been under treatment before admission, and who have been too much purged. The use of drastic purgatives in the early and middle stages of typhus, is one of the most fertile sources of subsequent evil, and there are few evils of greater magnitude than tympanites with diarrhoea, and gastro-enteric inflammation, particularly in the latter

stage of fever. Now, if you inquire into the history of the cases in which these symptoms are most distinctly marked, you will find that in at least two-thirds, powerful cathartics have been employed, not once, but repeatedly, in the commencement of the disease. Almost all cases, in which calomel and colocynth, or aloes, followed by black draught, have been liberally used in the commencement, become tympanitic, frequently at a very early period. The same mischief, but in a less degree, is apt to occur where a system of strict abstinence has been enforced, and continued undeviatingly for a considerable length of time. Want of food, even in the healthy state of the system, is apt to produce flatulence, weakness, and distension of stomach, and in many instances gives rise to very serious forms of gastro-intestinal irritation. The *dîète absolue* is very apt to produce the same effect in fever. Even the abuse of drinks of the simplest and most innocent description, is apt to produce flatulence, distension, and a tendency to tympanites. Hence the value of the rule which I laid down in a former lecture, viz., to allow the patient only small portions at a time, and to order him to swallow them slowly. The abuse of the ordinary drinks, as common water, whey, barley-water, soda and seltzer waters, and effervescing draughts, is a frequent source of tympanitic swelling in fever. In this hospital we seldom prescribe effervescing draughts, and never give them in the *ad libitum* quantity which some persons recommend. Thirst can be sufficiently assuaged by the use of whey, or common water, acidulated with currant jelly or raspberry vinegar, given in small portions, and at certain intervals. Sometimes you will succeed effectually in controlling feverish thirst by the use of a very light infusion of cascarrilla, acidulated with a small quantity of muriatic acid. I have seen this employed with success by Mr. Kirby, and I have often prescribed it myself with the best effects. Very often you will find that a small quantity of some light bitter, slightly acidulated, will appease the morbid thirst of fever more effectually, and for a much longer period, than large draughts of water, or any of the fluids usually employed for the same purpose. You should always bear in mind, that thirst in fever does not exclusively depend on a dry or parched state of the mouth or fauces, but lies much deeper in the system, and has its origin in some peculiar derangement of the nerves, most probably of those belonging to the ganglionic system. In going through a fever ward, you will meet with numerous illustrations of the truth of this position; for you will find one man with a moist tongue and fauces, and yet labouring under insatiable thirst, while you will observe another with parched tongue and throat, and yet without any desire whatever for fluids, or any choice as to their temperature. We had two examples of this in the fever ward during the past week. One patient with a moist tongue was incessantly calling for drink, while another man, who had his tongue almost perfectly dry, exhibited a very remarkable indifference to fluids.

There is one curious circumstance connected with the sensation of thirst in inflammatory diseases, which deserves attention. I lately attended a fatal case of metritis after delivery, in consultation with Mr. Hayden and Dr. Ireland. These gentlemen pointed out to me the singular fact, that the patient's thirst was instantly increased to an intolerable degree, by pressure applied to the womb. I merely notice the fact here as being extremely curious, leaving the explanation of it to those who are more conversant with such investigations.

Having said so much of food and drink in fever, I come now to speak of external and internal remedies, and first of blisters. Blisters are employed in a variety of diseases, but are followed by very different physiological effects, and capable of serving very different purposes, according to their mode of application. In fever they are generally employed either as stimulants, or as evacuants and derivatives. As stimulants, they may be used with the intention of rousing the depressed energies of the system in general, by their action on the nervous and circulating systems, or of stimulating the torpid functions of some particular part or organ. With this object in view, they are applied as flying blisters—that is to say, for a space of time not exceeding two or three hours, and solely with the intention of producing a stimulant effect. You have seen some cases of fever in our wards, in which the powers of life were greatly depressed, the extremities cool, the action of the heart feeble, the pulse weak, respiration short and imperfectly performed, and a tendency to faintness and sinking; and you have observed that in such cases we derived great benefit from the application of flying blisters over the region of the heart, the epigastrium, chest, and inside of the legs and thighs. We applied our blisters in these situations, left them on for two or three hours, and then removed them; and you have seen them, when employed in this way, succeed in rousing the vital energies, the depressed action of the heart and capillary system, and the flagging state of the respiratory function, as shown by the increased strength of the pulse, the more general diffusion of heat, and the renewed play of the various functions.

In such cases where the stimulant effect alone is required, it would be wrong to leave the blisters on longer than two or three hours; it will be quite sufficient if they prove merely rubefacient, or, at most, vesicate so slightly as to give to the blistered surface the appearance of a miliary eruption. Here you have all the stimulant effects of blistering, but not followed by their debilitating consequences. You are aware that blisters applied in the ordinary way have a twofold effect; they first rouse, and then depress; acting primarily as stimulants, and secondarily as evacuants. They first act as stimulants, producing pain, heat, and redness of the part; after a few hours these symptoms diminish, and are followed by an effusion of serum—in fact, a quantity of white blood is abstracted from the cutaneous capillaries, and in this way an

evacuation is produced, calculated to diminish any accidental congestion in neighbouring parts. The capillaries, by means of their increased action, draw a quantity of white blood to the part; and in saying this, I think I am only using a perfectly physiological expression; for the quantity of circulating fluid in any part of the body must depend on the vital action of the capillary vessels of that part. It is to the peculiar state of the capillary vessels that the quantity of blood in any part is to be referred, and not to the force or frequency of the heart's action. It is by means of changes produced in them that the phenomena of active congestion and inflammation are produced: the capillaries of the affected part enlarge, increase in number, and multiply, and those which were invisible become visible. These phenomena have been falsely attributed by Hastings and others to debility and impaired action of the capillaries.

Enlargement or distension of the capillary vessels, whether the result of active local congestion or inflammation, is quite a different process, and bears a very close analogy to the enlargement of the anastomosing arteries of a limb in which the principal vessel has been tied. The afflux of blood, and the vascular distension, are not the consequences of debility or of relaxation, but of an actual increase of vital action. In the enlargement of the anastomosing arteries which takes place in cases of collateral circulation, the increase of size is not confined to the arteries connected with the main trunk; it commences simultaneously in the more distant set of branches, beginning in the smaller ones, and then gradually extending to the larger. This is a proof that the enlargement of the vessels depends solely on a vital action inherent in themselves, and is not the result of a mere passive distension, or of an increased determination of blood to the part, produced by the action of the heart.

Dr. Houston, in a very important paper on the circulation in a monstrous foetus, without head or brain, published in the last number of the Dublin Medical Journal, has proved almost to a demonstration, that, in the case referred to, the circulation in the placenta could not be carried on, unless by the vital attractive power of the capillaries. It is owing to this power that vascular tumours bleed so profusely when wounded or scratched: and yet, if you cut through the artery which supplies them, there will not be any considerable hemorrhage. When you divide the artery, the capillaries cease to draw blood to the part, and the hemorrhage is slight; but if you wound the tumour itself, the blood is attracted to the part as fast as it drains off, and a profuse hemorrhage is the result.

You should also bear in mind, that there are many animals which are without a heart, and yet in which the functions of the circulation are adequately performed. We have numerous instances of human monsters born without any trace of a heart, and yet well nourished and developed. In cases of this description

how is the circulation carried on, or by what power is the blood impelled through the vessels? I do not see what cause we can refer it to, except the vital agency and attractive power of the capillary system. I mention these facts because, in the treatment of inflammatory and febrile affections, it is important that you should have correct physiological views, and that you should bear in mind, that each part and organ of the body may have its vital action deranged, or, in other words, may become congested and inflamed, independently of the action of the heart or the general circulation.

Blisters, then, produce first increased action of a part, and then act as evacuants. They also stimulate the system generally; but if left on until full vesication is produced, they act as evacuants and depletives, and lower the general tone of the economy. I have frequently observed this succession of events in chronic cases, in which it was found necessary to blister repeatedly during the course of the disease. The patients generally told me that they felt better and lighter on the day on which the blister was applied, but on the next day they usually felt weaker and more depressed; and this state sometimes lasted more than a single day. You may therefore apply blisters as excitants and stimulants, or you may employ them as evacuants and depletives; yet there are many persons who seem to forget this distinction. If in a case of inflammation, occurring in a low state of the system, you propose to apply a certain number of leeches over the inflamed organ, they say no; but they have no hesitation in applying a large blister, leaving it on until it produces full vesication, and thus abstract a considerable portion of white blood from the system.

You will not expect me to lay down any general rules for the use and application of blistering in fevers; you will find all these matters sufficiently explained in your books and manuals. I am not giving anything like a regular outline of the treatment of fever; in fact I pass, *per saltum*, from one point to another, without any attention to order or method. You can read methodical treatises, and then compare them with such detached observations as I shall make. And here allow me to make some detached observations on that peculiar state of the brain which we most commonly observe in the middle stage of typhus, and in which blisters form one of our most efficient, and in some instances our only mode of relief. In many of the cases of typhus which come under our observation in hospital, we frequently meet with a train of symptoms strongly calculated to perplex and puzzle, and which should seldom exist in fever regularly treated; these are chiefly cases which are admitted in the middle or latter stage of the disease; and at a period when the patient's state of intellect is such as to preclude the hope of obtaining any satisfactory information from a personal examination.

A man in the lowest class of life, and at a distance from medical aid, is attacked with fever; for the first eight or ten days he is either improperly treated or altogether neglected, and in this state

symptoms arise and superinduce others, giving rise to the most unfavourable complications, and rendering the cure difficult, if not impossible. Now of all the symptoms which occur in cases of fever, where the state of the principal organs have been neglected, there are none more formidable, or more fatal, than the cerebral; nor is there any local affection in fever, in which the value of prevention is so unequivocal and decided. What I wish to impress upon you is, that you should always anticipate the cerebral symptoms in fever. Never allow the cerebral symptoms to explode—watch the first scintillæ of cerebral excitement—repress the commencing mischief, and do not allow your patient to be overtaken by formidable inflammation of the brain. This is one of the points in which I have changed my practice. I never allow cerebral symptoms to become established in any of the cases which I have treated of late. Every writer will tell you that when the patient's face is flushed, his eyes suffused, and when he complains of headache and intolerance of light, you should leech and blister his head, give him purgatives, tartar emetic, James's powder, and the medicines calculated to bring down cerebral excitement: but a careful and observant practitioner will anticipate all these symptoms, although there is as yet no particular flushing of the face, headache, or suffusion of the eyes; and though the patient is still quite rational, he will recognise threatening disease of the brain long before it commences, and take proper steps to prevent its explosion. Watch the functions of the brain attentively, and they will inform you, in almost every case, of the approach of cerebral symptoms. You will find in patients who are about to have cerebral symptoms, a degree of restless anxiety, and a higher degree of energy than accords with their condition; and they either do not sleep at all, or their sleep is broken by startings and incoherent expressions. When you speak to a person in this state, he answers in a perfectly rational manner; he will tell you that he has little or no headache; and were you to be led away by a hasty review of his symptoms, you would be very likely to overlook the state of the brain. If you inquire closely, you will find that he scarcely ever sleeps, or even dozes—that he is irritable, excitable, frequently incoherent, and muttering to himself. Under such circumstances, although there is no remarkable heat of scalp, suffusion of the eye, or headache, I am frequently led to suspect the supervention of cerebral symptoms, particularly about the ninth or tenth day of the fever (for it is generally about this period that cerebral symptoms begin to manifest themselves); and whenever I observe these premonitory indications, I never hesitate in taking proper measures to anticipate the evil. I immediately order the hair to be shaved off, and blister the whole scalp. Thus, at the period when disease of the brain would most probably have set in, I have the whole external surface of the head pouring out serum, or even suppurating: and when by this treatment I have opposed a barrier to the further progress of the disease, the exhibition of a little tartar

emetic will soon remove every trace of it. In laying down this plan of treatment, I have supposed that the patient has been properly treated from the beginning, and that the earlier symptoms of inflammatory excitement have been combated by bleeding, leeching, and other appropriate depletory measures.

There is, on the other hand, an opposite state of the patient, which in like manner informs me that danger to the brain is at hand. In this case the patient is almost continually sleeping. When you enter his chamber in the morning, and ask how he does, his attendant generally tells you that he has passed the night most favourably, and that he has slept without almost ever waking since your visit on the preceding afternoon. If he awakens to take drink, he quickly drops asleep again, and when you arouse him he looks rather heavy; there is some slight effusion of the tunica adnata, and some appreciable congestion about the external parts of the face and head. Persons in this state, though apparently doing well, and even where they have been properly treated in the beginning, about the ninth or tenth day begin to rave, and exhibit undoubted proofs of congestion and excitement of the brain. Now, in all cases of this description be on your guard, and do not allow symptoms of dangerous import to steal on you. Here you will derive great benefit from the use of blisters. I was lately called to a very remarkable case of this kind, at some distance from Dublin. The patient slept almost constantly, and complained of no headache or heat of scalp. From an attentive examination of the case, however, I was led to predict the approach of cerebral symptoms. Observe, this was a case of spotted fever; and in this form of fever you can predict the occurrence of such symptoms with a greater degree of confidence. The patient's pulse was 96, his tongue presented nothing worthy of remark, his behaviour and speech rational, and his sleep almost constant. Recollecting, however, the period of the fever, and observing carefully the condition of the cerebral functions, I had his head shaved and blistered. Notwithstanding this precaution, his cerebral symptoms had proceeded so far that he subsequently got a slight attack of paralysis of the face and tongue, accompanied by a fixed state of the pupils, which would neither contract nor dilate. After having blistered his head extensively, I gave him the tartar emetic solution, to the amount of one-eighth of a grain every second hour. These measures were completely successful in removing the cerebral symptoms, and I have no doubt that the active precautions which had been taken were the means of saving his life.

Now there is one symptom connected with cerebral excitement in fever which is well worthy of your notice, as its existence is often sufficient of itself to give timely intimation of the approach of irritation or inflammation of the brain. This is, the state of the respiratory function. In fever, the breathing will often announce the approach of cerebral symptoms for days before their actual occurrence. When, in cases of typhus, you find the patient's

breathing permanently irregular, and interrupted by frequent sighing — when it goes on for one or two minutes at one rate, and then for a quarter or half a minute at another rate, you may rely upon it that sooner or later an affection of the brain will make its appearance. You will frequently observe the same kind of breathing preceding attacks of apoplexy and paralysis, and indeed it was the occurrence of this symptom, in these and other cases in which the functions of the brain were deranged, that first drew my attention to this kind of breathing. The first time it engaged my attention was in a remarkable case of an apoplectic nature which I sat up a whole night to watch. On recollection, I found that I had frequently observed an analogous state of the respiratory function in fever on several occasions, although its connection with excitement of the brain had not struck me before. I speak here of irregularity of breathing independent of any pectoral affection. But when the patient breathes in a permanently irregular manner, at one time at a certain rate, and at another at a different rate,—when his respiration is suspicious and heaving, without any disease of the chest or great debility,—you will have some ground to suspect the existence of cerebral derangement. I am in the habit of calling this kind of breathing cerebral respiration, because my experience has told me that it is almost invariably connected with oppression and congestion of the brain. To recapitulate:—When you find a patient in fever lying constantly awake, or when on the contrary you find him continually slumbering,—when there is a certain quickness of manner and irritability,—and when the cerebral respiration has been noticed for some time, without any concurrent debility or pulmonary disease,—under such circumstances, you may, in cases of maculated typhus, predict the approach of cerebral symptoms; and the period about which they generally manifest themselves, is the eighth, ninth, or tenth day. Now in cases of this description,—if you have previously used leeches and antiphlogistics to a sufficient extent,—your best plan will be to shave and blister the whole scalp. Dr. Little, of Belfast, and Mr. Kirby, of this city, have fallen into the same train of ideas, and employ blisters at a very early period of the disease, with the view of combating cerebral excitement. In a recent instance, in private practice, I think I saved the life of a young gentleman in Harcourt street by extensive blistering of the scalp on the fourth day of fever. We were not accustomed to blister at this early period of fever. Formerly it was the practice to bleed and apply leeches for several days together, and never to have recourse to blistering until towards the latter stage of the disease. In common inflammation or in arachnitis, we do not blister until we have carried depletion by the lancet, leeches, and purgatives, as far as the patient's strength will allow. But this is not the case in fever: the cerebral congestion and irritation, or inflammation, (call it which you will,) which accompanies typhus, differs essentially from ordinary arachnitis or

encephalitis, and requires very often a treatment strikingly different.

One physiological fact connected with sleep may be noticed here. It has been stated by Mr. Mayo, that the pupils are contracted during sleep. This is in itself a very curious fact, and I was anxious to verify it. Now we had an excellent opportunity yesterday morning of trying what the state of the pupil was in two patients who lay soundly sleeping in the fever ward. We came up softly to them as they lay on their backs, and in a most favourable situation for observation, just under one of the windows; and having opened the eyelids, found that the pupil was actually contracted to the size of a pin-hole. It remained in this state for a while, and then expanded, when they awakened. This is a very curious fact, and appears to be a very beautiful instance of the protective care of nature. To protect the eye while we sleep, nature, as it were, draws the curtain, and thus defends the delicate organ from any accidental dazzling, at a period when consciousness slumbers, and is off its guard.

Blisters applied extensively to the shaven scalp, are not only valuable in fever, but also in other diseases, and that under circumstances in which little benefit could be expected. The same effects may be produced by rubbing the whole scalp with tartar emetic ointment; but from the pain and inflammation it produces, this proceeding is seldom adopted. I have, however, occasionally employed it; and on two recent occasions with the most fortunate results. A friend of mine had lost two children from hydrocephalus. About five weeks ago another child, an extremely fine boy, was attacked with symptoms of the same disease. After having laboured for a fortnight under fever, with great restlessness, vomiting, and diarrhoea, he was observed to utter frequently that faint cry which is so characteristic of hydrocephalus, and to roll his head constantly from side to side. These symptoms were soon afterwards succeeded by constant motions of the right arm and leg, and subsequently by paralysis of the opposite side. I was consulted before the paralysis occurred, and advised the child's father to have the whole of the blistered scalp well rubbed with tartar emetic ointment. The boy recovered completely. I derived also a very striking advantage from the use of the same remedy in a very remarkable epidemic which attacked a family in the neighbourhood of Rathmines, and which was witnessed throughout its whole course by my friend Dr. Burke and myself. One of the family, a young lady, was attacked with symptoms of fever, accompanied by pain in the back of the head and stiffness of the neck. After a few days, symptoms of inflammation of the cerebellum and upper part of the spinal cord became developed. About the seventh day she got strabismus, and soon afterwards was attacked with convulsions: the pupil became permanently dilated, and she was quite blind. I was called to see her at this period, and found her almost in a state of insensibility, with involuntary

discharge of urine and faeces, cold extremities, and irregular pulse. Thinking that nothing could be done for her, I was about to leave the room, when I asked the nurse, could she swallow? She replied she could, and immediately proceeded to offer the young lady some drink, which she swallowed without any difficulty. This at once arrested my attention. I said to myself, if this patient can swallow, she must be still conscious, and while she is so, there is a chance of saving her. I ordered the whole of the scalp, which had been previously blistered, to be rubbed with tartar emetic ointment; violent inflammation ensued, and she recovered completely. But the curious part of the case is this:—her brother and sister were attacked, in exactly the same way, a few days afterwards, although less formidably, and were cured by the same treatment. Shortly afterwards two of the servants got pain in the back of the head and stiffness of neck, followed by signs of an inflammatory affection of the cerebellum and spinal cord. They were treated in the same way, and recovered.

What could be the cause of this peculiar fever, manifesting itself in exactly the same way in all the individuals of the family who were attacked? I endeavoured to arrive at the cause, but could not; but I merely state the facts, without wishing to attempt anything like an explanation. But the history of this extraordinary form of disease is exactly as I have told you. It has been witnessed by Mr. King and Dr. Burke, and they, as well as myself, were very much struck with the novelty of the phenomena.

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## LECTURE VI.

Further remarks on the treatment of fever — Management of delirious patients — Advantages of tartar emetic in the form of enema — Subsultus tendinum sometimes from disturbance of the nervous extremities, independently of the brain or spinal cord — Vomiting and purging at the commencement of fever, indicative of cerebral affection — Scrofulous inflammation of the brain — Chronic scrofulous fever.

In speaking of the use of drinks in fever, I alluded to the abuse of soda or seltzer water, and effervescent draughts. It is very much the custom both in hospital and private practice, to look upon the latter as a remedy which may be administered at the pleasure of the patient, or the discretion of the nurse. They are certainly to many persons a most grateful means of cooling thirst; but the cautious physician will never allow his patient to indulge too much, for he knows that their frequent use distends the stomach, and produces a tendency to tympanites and bowel complaint. I am also of opinion that the exhibition of large quantities of free carbonic acid is a very doubtful, if not a dangerous, practice in fever, and may increase that tendency to narcotism and functional de-

rangement of the nervous and respiratory systems, which is observed in every case of genuine typhus. In addition to this, the evolution of a large quantity of fixed air in the stomach frequently causes a very disagreeable sense of distension and suffocation, and acts injuriously on the mucous membrane.

Allow me here to digress a moment from my subject, and make a few observations on a case which terminated fatally in our wards within the last twenty-four hours. I wish to call your attention to this case more particularly, as I think a different plan of treatment might have succeeded in saving the man's life. This man was admitted into the fever ward about the seventh or eighth day of his illness. I cannot exactly state how he was treated in the commencement, but I believe he was very badly attended, and that the state of the principal organs was wholly neglected. It will be sufficient to state, that when he came under our care the chief features of his case were delirium, accompanied by total want of sleep, and a violence of conduct and behaviour calling for the restraint of the strait waistcoat. Now under circumstances of this nature the most diligent attention and promptitude are imperatively demanded on the part of the physician, and every step calculated to anticipate danger should be instantly taken. I regret to say that I did not at the time take a correct view of the treatment, or precautions necessary to be adopted under such exigencies. I did not expect that the case would terminate fatally in such a short time, and I anticipated benefit from the remedy prescribed. He was ordered to take the tartar emetic solution in full doses; but on visiting him next morning, we found that he had obstinately refused to take his medicine, and that his symptoms were greatly aggravated.

In delirium of this kind it is certainly very difficult to manage the patient, and we are frequently obliged to have recourse to force or stratagem to make him take his medicines. I regret extremely that this man's head was not leeched on his admission, as, from the state of his pulse, I think he would have borne it well. Eight leeches might have been applied to his temples, and repeated two or three times the same day, according to the state of his pulse and strength. I think I was wrong in contenting myself with ordering the tartar emetic solution and a blister to his head, and I should have anticipated from the violence of his behaviour that it would be very difficult to manage him.

In cases of this kind, where it is necessary to give tartar emetic, (and this is one of the best remedies you can employ in cases of cerebral excitement in fever,) you should be always prepared to obviate any omission arising from the obstinacy of the patient; and when he will not take his medicine voluntarily, you may secure its effects on the system in two different ways. In the first place, it may be secretly mixed with the patient's ordinary drink; and as such persons are generally thirsty, and seldom refuse drink altogether, an intelligent nurse will readily find means to make the

patient take a sufficient quantity of it to secure its full effect on the cerebral circulation.

Another expedient which you may resort to on similar emergencies, is to give the tartar emetic in the form of enema. I had recourse to this plan some time back, in a similar case of delirium, and with the best results. After leeching the head, I gave the solution of tartarised antimony in enema; and this can be always done, whether the patient likes it or not, if you take care to prevent his struggles by confining him in a strait waistcoat. The best way of administering it is to dissolve two or three grains of tartar emetic in four or five ounces of mucilage of starch or isinglass, and inject it with the aid of a long flexible tube, so as to make the contents of the syringe pass high up into the bowel. In this way you can secure all the good effects of tartarised antimony in overcoming the congestion of the brain, and procuring sleep. In all cases of alarming congestion of the head in fever, I have been long in the habit of using tartar emetic in this way, if the stomach be deranged, and incapable of bearing it safely; and I can assure you that it is a most fortunate thing to have such a powerful resource in all cases of the kind. I have also not unfrequently given expectorant medicines in the same way, where from the state of the stomach, or the debility of the patient, the ordinary remedies could not be administered by the mouth with sufficient rapidity, or in sufficient quantity to produce the desired effect. In this way I have often given the infusion of ipecacuanha — a remedy of very considerable value, and not sufficiently appreciated by most modern practitioners. I may also remind you that vomiting, and all the benefits derivable from it, may be likewise produced in this way. Now where the stomach is irritable, and yet there exists a necessity for such remedies, it is a very fortunate circumstance to be in possession of a means of employing them without inflicting any injury on the stomach, and thus counterbalancing the good effects of the remedy by the injury done to the stomach. Of course the cases in which these expedients are required are comparatively rare, but the practical physician must be always prepared for such exigencies, and be provided with every means of meeting them.

Another of our patients died also within the last few days in the fever ward. He laboured under a very bad form of maculated fever, and when admitted was evidently in a hopeless state. I shall not say anything about this case, except to use it as an occasion for making a few observations on a particular state of the cerebro-spinal system, which we not unfrequently observe in cases of maculated typhus, and occasionally in other varieties of fever. Now you observed that this man had not the slightest tendency to sleep; that he lay with his eyes constantly open, raved incessantly, had subsultus tendinum, floccitatio, and cold extremities, and often attempted to get out of bed. Yet we could not find in him anything like decided evidence of cerebral inflammation. The tunica

adnata was of a clear pearl-white, the face pale, and the scalp and integuments of the face cool. You perceive, then, that sleeplessness, delirium, and subsultus tendinum, may depend on a state of the nervous system having no connection with congestion of the brain, or determination of blood to the head. This occurrence has struck me very forcibly in many cases of fever. But I have been most particularly struck with the occurrence of subsultus tendinum in such instances. In the present case we had a patient with sleeplessness and subsultus. But this concurrence of symptoms does not always exist. You recollect the case of the boy in the small fever ward, who laboured under excessive subsultus, and to whom we gave the spirit of turpentine in dram doses with so much benefit. Yet this boy, as you all remember, slept remarkably well. I have frequently pointed out to the class patients labouring under subsultus tendinum, who slept well, and in whom the tunica adnata was of a pearl-white colour, without the slightest suffusion. We have subsultus, therefore, occurring in two very opposite states of the nervous system; we have it accompanied with loss of sleep, and we have it existing in that condition of the system where the patient slumbers long and heavily, and cannot be easily roused. Hence I was inclined to think that the cause of subsultus resides not so much in the nervous centres as in their extremities. I would even go so far as to advance the proposition, that if it were possible for the fever to go on, and life to continue after the removal of the brain and spinal cord, I am quite sure that the subsultus would continue. I am almost confident that subsultus tendinum is the result of some derangement of the nervous extremities. I have shown on a former occasion, when lecturing on the subject of paralysis, that the nervous periphery may become diseased primarily, and without any antecedent affection of the brain or spinal cord. I think it extremely probable that in fever the nervous centres are subject to certain derangements producing coma, sleeplessness, and delirium, but that there are other nervous symptoms which are to be referred rather to a derangement of the nervous extremities, and among the latter I would particularly include subsultus tendinum, a symptom which we find co-existing with such opposite conditions of the nervous centres.

But to return to the case to which I first alluded. Never blister in the early stages of fever, until you have applied leeches in sufficient quantity. In this case, it is true, we could not well ascertain what the period of the fever was; for the man was brought in in a state of delirium, and there was nothing known respecting his previous history. Yet you are all aware that a great deal must depend on our knowledge of the period of the fever, and the medicines which have been employed. Had we been acquainted with these circumstances, it is probable we would not have fallen into the error we committed. What I wish to impress on you, is, that in all cases of maculated typhus, you should be careful in examining the head and ascertaining whether there are any evidences of

cerebral congestion present. If there is headache, strong pulsation of the carotids, suffusion of the eyes, and heat of the face and scalp, along with the other signs of functional lesion of the brain present, you should always have recourse to leeching; beginning cautiously, and continuing their application as long as the patient will bear it with safety. When you have the symptoms already mentioned, and the patient is in the early stage of fever, you may commence by applying one or two leeches to the nostrils, or six or eight to the temples, or behind the ears, repeating them two or three times a day, according to the exigency of the case. The best way of using leeches is to apply them in small numbers every six or eight hours, so as to keep up a constant drain from the head. After you have leeched sufficiently, you may then have recourse to blisters. In making this change, much will depend on the sagacity and skill of the practitioner; for it requires no ordinary tact to hit on the proper time when you should give up leeching and commence with blisters.

I shall make no apology for introducing here what I consider to be an important observation, with reference to the pathology and treatment of fever. We had a striking instance of the fact on which I am about to offer some comments, in the case of a little girl who died lately here, in a very remarkable manner. I mentioned in a former lecture, that vomiting and purging in the commencement of fever are, generally speaking, indicative of a cerebral affection. Every fever which commences with vomiting and diarrhoea, whether it be scarlatina, or measles, or typhus, is a fever of a threatening aspect; and in all such fevers the practitioner should be constantly on the watch, and pay the most unremitting attention to the state of the brain. There is much difference between the vomiting and diarrhoea of gastro-enteritis and this cerebral diarrhoea and vomiting. The latter sets in generally at a very early period of the disease, perhaps on the first or second day, and is seldom accompanied by the red and furred tongue, the bitter taste of the mouth, the burning thirst, and the epigastric tenderness, which belong to gastro-enteric inflammation. There is also another source of diagnosis, but of a less valuable kind; and this is founded on the results of treatment. Gastro-enteric vomiting and diarrhoea are relieved by leeching the belly; but I need not tell you that this mode of treatment can have no effect on the vomiting and purging produced by cerebral disease. There is also another source of diagnosis; the vomiting and diarrhoea which results from gastro-enteric inflammation is never accompanied by such copious discharges of bile as that which depends on disease of the brain. In diarrhoea from derangement of the brain, the quantity of bile passed is very remarkable; and it is equally curious, that when vomiting follows derangement of the cerebral circulation, in ordinary cases, and without fever, bile is thrown up in very large quantities. This is frequently observed in persons who become sick from swinging, or sailing. In such instances, a

larger quantity of bile is vomited than could occur from mere gastric irritation. Now in the commencement of cerebral disease, where congestion or inflammation is present, one of the first symptoms is copious vomiting, and purging of a bilious character. This is very often the case in scarlatina, and there are few cases in which there is more danger to be apprehended. We had these symptoms, under very unfavourable circumstances in the little girl to whom I have just alluded. From the imperfect history of the case which we were able to obtain, it appeared that she had been ill of fever for fourteen days before her admission, and had in addition a severe attack of bronchitis and pneumonia. She then got inflammation of the stomach, and finally congestion of the brain, as indicated by the cerebral vomiting and purging. We employed every means in our power to check these symptoms, but without success; she went on from bad to worse, and she ultimately sank under a combination of affections, which you will frequently observe in many forms of disease as well as in fever; and it is to this point in particular that I wish to direct your attention. You will frequently observe that at a certain period of fever, whether it be inflammatory, nervous, bilious, or typhoid,— and very often in other forms of disease, whether depending on a general affection of the system, or connected with inflammation of important organs, when the patient has been going on pretty well for some time,— you will find that about the period when you would naturally expect that the fever would go off, and convalescence begin, a new form of fever makes its appearance, and carries off the patient in spite of all your exertions. To this form of secondary fever I would give the name of scrofulous, because it resembles in its chief features the intractable form of fever which is frequently observed in persons of an originally scrofulous habit, or who have become so from the abuse of mercury or other debilitating causes. This is a form of fever which is not well understood, and I am not acquainted with any author who has devoted to it that share of attention to which, from its great importance, it has such decided claims.\* Its chief characters are, that the patient, during its existence, exhibits a strong tendency to inflammatory

\* [This form of fever is much better understood than Dr. Graves seems to suppose. It is, in fact, nothing but the acute tuberculous fever, which is to a great degree identical, whatever be the organ which is involved. Dr. Louis was one of the first to direct much attention to it as one of the terminations of typhoid fever. In the year 1832 and 1833 it was studied under another form, the tuberculous inflammation of the membranes of the brain, by Dr. Rufz and myself at the Children's Hospital of Paris. The tuberculous pleurisy was already well known. In all these varieties there is a very frequent pulse, which is totally independent of the local inflammation, and sometimes is met with before any local disorder shows itself. This character of the pulse certainly depends upon the general disorder of the system, and accompanies a rapid secretion of tuberculous substance. It is in some cases very difficult to recognise, because it is preceded by different disorders, each having its peculiar symptoms, which are gradually blended into those of the tuberculous fever.—*Ed.*]

affections, which bear a close analogy to the scrofulous, both in their intractable character, in the facility with which they pass from one organ to another, and in their frequently unsavourable termination. A patient of this description, while labouring under fever, will frequently exhibit a very remarkable succession of inflammatory affections. If, during the course of his fever, he gets an attack of *gastro-enteritis*, you will have great difficulty in managing it; and no sooner is this overcome, than he is seized with *bronchitis* or *pneumonia*; and when, by great care and the most skilful treatment, you have overcome this also, he gets scrofulous inflammation of the brain, and dies. Now you will frequently meet with patients who, during the course of *typhus*, will be attacked with this bad form of fever, and get what may be termed scrofulous inflammation of the brain, which carries them off in five or six days, in spite of all your care. You are aware that persons who are much in the habit of observing disease of the brain, can generally distinguish between scrofulous inflammation of the brain and its membranes and that inflammation which occurs in persons of healthy habit. In cases of the latter description, the treatment, if commenced at the first appearance of the disease, is simple and successful. Appropriate bleeding and leeching, with the use of calomel and James's powder, are almost always sufficient to accomplish a cure. When once you have succeeded in touching the gums with mercury, the patient's safety is tolerably certain, and recovery is in general rapid; but in the scrofulous affections of the brain, although you may have fully mercurialised your patient, you will too often discover that you have merely retarded the progress of the complaint for a brief period; it returns again, and carries him off in spite of all your efforts. In the scrofulous hydrocephalus, a much greater time elapses from the appearance of *coma* and *strabismus* until death takes place, than in the ordinary forms of *meningitis*. This fact was well illustrated in the case of the little girl to which I have just now referred: she continued to live on for a long time after the appearance of symptoms which you would think ought to terminate fatally in a few hours after they had become developed. There is also a great deal of irregularity in the way the symptoms come on in cases of scrofulous inflammation of the brain. Sometimes blindness is one of the first symptoms. I recollect having been called, with Dr. Beatty, to see a very fine boy, living in Merrion square, and was very much struck, on entering the drawing-room, to find him walking about, and in apparent good health, but quite blind. Here *amaurosis* was the first symptom. This was subsequently succeeded by others, and he died in a convulsive fit about a fortnight afterwards.

We have many excellent observations on the chronic scrofulous fever, but I think that there is no author who has described this acute form with the precision and care which it deserves. It is, however, a very frequent form of fever, and you will see many

examples of it among the chronic patients in the medical and surgical wards. You will frequently observe persons who are labouring under acute disease, from accidents or other causes, become feverish and ill again at a time when you expected a remission of their symptoms, or even recovery; and, without any assignable cause, they will get scrofulous inflammation of some other part or organ, and quickly fall into a state of hopeless and incurable disease.

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## LECTURE VII.

Scarlatina without eruption, followed notwithstanding by desquamation—Thoughts on the nature of desquamation—Latent scarlatina, followed by anasarca—General proposition respecting the symptoms of animal poison—Morbid appearances after delirium in fever—Treatment in anticipation of cerebral symptoms—Great advantage of blisters judiciously employed—Notice of the old mode of blistering.

BEFORE I resume the thread of my discourse, permit me to mention some curious facts recently observed. Dr. Marsh and I attended, not long since, a lady who had been affected for some days with fever and sore throat. She had no eruption on any part of her body, but from the character of the fever, and the peculiar appearance of the throat, we suspected she was labouring under an attack of scarlatina. Her family were very anxious to ascertain the precise nature of her complaint; and I visited her twice a day for the first four or five days of her illness, carefully examining the skin at each visit, but could not discover the slightest trace of an efflorescence of any description. She continued for several days to suffer from the fever and sore throat, and was at one time in a dangerous condition, but ultimately recovered by great care and the use of appropriate remedies. Now I watched this case from the sixth hour after its commencement to its termination, and repeatedly examined the skin, particularly that of the breast, abdomen, and inside of the knee and elbow joints, places in which the eruption shows itself when it appears at all, but could not discover any vestige of it. You will often find a diffused redness about the knees and elbows, in cases where the eruption does not appear on any other part of the body; but in this instance there was not the slightest deviation from the natural hue. Yet the result proved that it was scarlatina; for the desquamation of the cuticle, which always attends this disease, took place, and the lady communicated the infection to several members of the family. A young gentleman residing in the house got a bad attack of scarlatina, two of the servants were also attacked, and the lady's father got sore throat; in fact, there could be no doubt as to the nature of the disease. During her convalescence she had desquamation of the cuticle; and this is a point to which I would particularly call your attention. We are taught to look upon desquamation as the result of

cutaneous affections of an inflammatory character; and it is an opinion very generally maintained, that in scarlatina, as in psoriasis, the peeling off of the cuticle depends on a peculiar state of the skin produced by inflammation. It is stated that the increased vascularity of the skin occasions a morbid secretion, and subsequent detachment of the epidermis, and that the same phenomenon is observed in all cutaneous affections of an inflammatory character. This may be generally, but not universally, true; for here we had an extensive desquamation of the cuticle without any eruption, without any previous redness, pain, or remarkable heat; in fact, without any of the phenomena which are regarded as constituting inflammation. This seems to prove that there is something more than inflammation concerned, as preparatory to that process which is termed desquamation, and that the change which the skin undergoes is not to be looked upon as a mere consequence of inflammation occupying the external surface of the corium.

Another curious fact observed in this lady's case: since the attack which I have just described she has been shedding her nails; that is to say, the nails of the fingers are all dropping off, and yet there is no appearance of inflammation of any kind about the hands to explain the occurrence. You are, of course, all aware that the dropping off of the nails is a species of desquamation. From the peculiar structure of the nail, and the mode in which it is formed in the matrix, it does not drop off at once like a scale of epidermis; still I think we are authorised in looking upon the shedding of the nails as a species of desquamation. This affords a very curious subject for investigation, as connected with the history of fever. It is an opinion entertained by many persons, that desquamation of the skin takes place at a particular period of typhus, and that this is not an occasional, or varying, but a constant and general phenomenon. This statement has been put forward most strongly by Dr. Perry, of Glasgow; and he is also of opinion, that the period in which typhus is most contagious is during the desquamation of the cuticle. It is also asserted, that scarlatina is more contagious during desquamation than at any other period of the disease. This is at least the popular idea; how true it may be my experience or observation does not enable me to decide; nor am I prepared to offer anything like an explanation of the occurrence. All I shall say on the present occasion is, that the occurrence of desquamation of the cuticle in typhus, and in cases of scarlatina without eruption, has greatly altered my ideas as to the connection between it and cutaneous inflammation. I think, at least, that the process of desquamation in such cases is very different from inflammation, and that the morbid action of which desquamation is the result, has very little in common with the ordinary process of inflammation of the cutaneous surface.

A gentleman who is in the habit of attending my lectures informs me that he has seen three cases of this form of scarlatina, characterised by the absence of the external efflorescence. They occurred

in young persons, after puberty, and between the ages of fifteen and twenty-five. Each of these cases exhibited a considerable degree of fever, with increased quickness of pulse, thirst, heat of skin, diminution of the urinary secretion, and, after the first or second day, much depression, which continued for two or three days, and then yielded to treatment. The tongue was moist, but pointed, tremulous, red, and injected. The velum, isthmus faucium, tonsils, and upper part of the pharynx, were somewhat swollen, and of a very peculiar dark-red colour, the redness being general, and equally diffused over the whole of the upper part of the pharynx as far as it could be examined. But the following case, which was very lately communicated to me by a practitioner of very great eminence in this city, is still more curious. Some years ago scarlatina broke out in this gentleman's family, and attacked all his children with the exception of one young lady, who, although in constant attendance on her sisters during their illness, did not exhibit any symptoms whatsoever of the disease. When all the children had become convalescent, they were removed to the country for the benefit of air, whither she also accompanied them. Here she was, much to the astonishment of her family, attacked by the peculiar anasarca observed in persons who have recently laboured under scarlatina. Her father, under whose observation she had been during the whole time, was very much struck with the occurrence; he paid particular attention to the case, and feels convinced that it was the result of latent scarlatina. This case, connected with those already detailed, is of great interest in a general pathological point of view.\* They appear to prove the fact, that in some instances diseases produced by contagion do not give rise to the whole train of phenomena by which they are ordinarily characterized.

Let us turn for a moment to some of those diseases caused by the action of animal poisons on the system, as, for instance, measles. The symptoms which generally attend and characterise measles are universally known. After an attack of fever, on the third or fourth day, coryza, sneezing, hoarseness, and cough, are complained of, and then a rash appears, first on the face, and afterwards on the body and limbs. But it is not necessary that all these symptoms should appear, and that the sequence of morbid phenomena should be uninterrupted throughout; on the contrary, it frequently happens at particular periods, and in certain constitutions, that some of the most usual symptoms are scarcely observed, or altogether absent. You will find this point insisted on by Dr. Bateman, who has given a detailed description of a form of measles in which the catarrhal symptoms are wanting, and which he has termed rubeola sine catarrho. The same remark applies to many other forms of disease. Thus we may have pneumonia without cough, and pleuritis without pain in the side. Those who have witnessed the

\* [In many of these diseases *some* of the symptoms are absent; but in none so frequently as scarlatina and typhus. — *Ed.*]

course of the late epidemic cholera in this country, will recollect that many cases occurred in which vomiting, purging, or cramps were not observed.

If we turn to fever, we find that the animal poison to which it owes its origin generally exhibits a certain number of symptoms, congregated together, or observing a determined order and succession; and these we meet with in most of the cases which come before us in practice. But we now and then see fever patients in whom one or more of the most prominent symptoms are absent. Thus occasionally there is no quickness of pulse or appearance of vascular excitement; in some there are no cerebral symptoms; in others no increase in the temperature of the skin. Indeed, I might go through the whole group of symptoms which accompany fever, and show that almost every one of them may be occasionally absent, and yet the fever of a severe and dangerous type. I recollect pointing out to the class last year the case of a man labouring under chronic enlargement of the spleen. He had been working for two or three seasons in some of the marshy districts of England, and had been occasionally ill, but never had symptoms of regular intermittent; in fact, he had escaped the intermittent itself, but not what are usually deemed the consequences of it. We have been in the habit of explaining the enlargement of the spleen by referring it to the conflux of blood towards the internal organs, particularly the liver and spleen, during the cold stage of intermittent; and we have endeavoured to explain the subcutaneous œdema which follows scarlatina, by attributing it to previous inflammation of the skin and subcutaneous cellular tissue; but the observations and facts which I have now brought forward will show that these opinions were founded on erroneous ideas. Turning to cases of chronic disease, we find in some, as for instance syphilis, that the poison taken into the system gives rise in most cases to a determinate order of symptoms, *e. g.* bubo, sore throat, eruptions on the skin, nodes, and syphilitic cachexy. Mr. Hunter has been at great pains in determining the order of the parts, and pointing out the tissues which are successively affected; and it is of considerable importance to have correct notions on this point; but although the number and order of symptoms marked out by Mr. Hunter and others may be observed in most cases, they are not so in all; and the same remark which has been made on the occasional absence of one or more important symptoms in scarlatina will apply with equal force to syphilis. Now and then the morbid poison which excites syphilis does not affect the constitution in such a manner as to occasion the production of all the symptoms which usually characterise this disease, and thus a variety of venereal is formed, which often proves a source of great embarrassment not only to the young and inexperienced, but even to the senior members of the profession.

It is of great consequence in a practical point of view, to bear in mind the general proposition I have announced, *viz.*, that in both

acute and chronic diseases *a constitutional affection may display its existence by only one or two of the numerous symptoms which usually accompany it*; and this occurrence seems more frequent in the case of diseases produced by contagion and morbid animal or vegetable poisons, than in the case of maladies generated by causes developed in the system itself.

I spoke at my last lecture of a man named Cassels, who died in the fever ward with symptoms of cerebral excitement, and stated that I regretted having omitted to leech his head, and prescribe tartar emetic in the form of enema. Since that time we have had an opportunity of examining his body, and the results of the dissection are well worthy your attentive consideration. He was a young man of robust habit and apparently good constitution, and laboured under the ordinary form of maculated typhus. Shortly after his admission he was attacked with delirium, which was soon afterwards followed by coma and death. Now, suppose you were called to see a patient, not labouring under typhus, but exhibiting a similar train of symptoms,—that is to say, violent delirium, accompanied by flushing of the face, suffusion of the eyes, headache, and a tendency to get out of bed—in fact, a state of furious excitement requiring the restraint of the strait waistcoat,—what idea would you be likely to form of the condition of the brain? If a patient of this kind had no typhoid symptoms, you would certainly say that he was labouring under meningitis or cerebritis; and if the case proved fatal, you would naturally expect to find lesions of the brain fully sufficient to account for all his symptoms. And you would in all probability find extensive thickening of the membranes of the brain, with subarachnoid effusion, or you would discover softening, increased vascularity, and suppuration of the encephalic mass. But, here, a man in fever exhibits all the symptoms of cerebral inflammation; the cerebral affection runs on to a fatal termination with great rapidity; he dies comatose. And what do we find on dissection? Doubtful signs of congestion, and no distinct evidence of inflammation; a slight opacity of the arachnoid at the base of the brain, and about a teaspoonful of clear subarachnoid effusion. Now this is a point to which I would earnestly call the attention of every inquiring student. A patient, during the course of typhus, is seized with symptoms which are generally regarded as characteristic of congestion and inflammation of the brain: he dies, to all appearance in consequence of the intensity and violence of these symptoms, and on dissection little or no trace of cerebral disease is found. In the case under consideration, the symptoms present were strongly indicative of congestion if not of inflammation; and had the man been free from typhoid symptoms, you would expect to find decided traces of inflammatory mischief. This seems to prove that in the production of cerebral symptoms in typhus, some cause not to be recognised by the production of cerebral lesions, or in other words something besides mere congestion or inflammation exists. I have now examined a great number

of cases of this description, and the examination has brought home to me a strong conviction, that the delirium of fever depends upon something more than mere inflammation or congestion. There is another fact, the study of which is well worthy of attention, as it appears to support very strongly the views I have put forward; and this is the occurrence of analogous symptoms under opposite conditions of the cerebral circulation. Take, for example, the phenomena of vertigo and headache. Now these symptoms are found in states of the brain which are directly opposite. In incipient congestion of the brain, in that turgescence of the cerebral vessels which precedes apoplectic seizures, one of the most frequent symptoms is vertigo, and the same thing may be affirmed with respect to headache. But we observe the very same symptoms under circumstances totally dissimilar. Frequently while bleeding a patient for some affection of the lungs or bowels, or for some accident, we find that after a certain quantity of blood has been lost, the patient becomes pale; and while the pallor is coming on, he often gets quite giddy, and sometimes complains of headache. Gentlemen who are attending lying-in hospitals are well acquainted with the headache, giddiness, and tinnitus aurium, so constantly complained of by females who have suffered from excessive uterine hemorrhage. Hence you perceive facts are not wanting to show that opposite states of the cerebral circulation, a superabundance or deficiency of pressure on the brain, may give rise to similar phenomena. You saw an illustration of this in the case of one of our patients in the fever ward this morning. He was quite free from headache as long as he remained in the horizontal posture, but the moment he sat up in bed he complained of headache. Yet this was a man who had not the slightest symptom of determination to the head, and who had been sufficiently depleted during his illness. You will also recollect the fact, that persons who have had a long illness, and remained for many days in the horizontal posture, generally get weakness, giddiness, and sometimes headache, at first when they attempt to sit up during convalescence. This is a point which should always be borne in mind. You are consulted by one person who complains of giddiness, tinnitus aurium, and frequently recurring headache. You examine the patient carefully, and you find all the symptoms of unequivocal determination to the head. You are applied to by another person labouring under the same symptoms; but how different is the state of the brain found to be on a careful examination. One patient is robust, of florid complexion, and with a hard bounding pulse; the other is a weak chlorotic female, who has been ailing for months, and whose pulse is so weak, that a slight degree of pressure obliterates the canal of the artery. Yet the tinnitus aurium, giddiness, and headache, complained of by the latter, is just as bad and as troublesome as in the case of the former.

From a consideration of these points, you will perceive that, for the production of cerebral symptoms in typhus, there must be

something more than mere congestion or inflammation of the brain; but you are not to infer from this that there is no necessity for taking any steps to obviate or remove congestion of the head in fever. On the contrary, I am of opinion that in typhus one of the principal sources of danger is connected with the head, and that the cerebral symptoms should be always watched with the most unremitting and anxious attention. It is this which constitutes the great difference between the mortality in private and hospital practice. In private practice the physician is called at an early period of the disease, and has an opportunity of checking the cerebral symptoms before they rise to a dangerous height; but hospital patients, in general, are admitted at an advanced stage of fever, and in many instances have been improperly treated, or wholly neglected from the commencement. I am also of opinion, that when there is any evidence of determination to the head, the best way of preventing dangerous cerebral symptoms is to deplete the head by the application of a sufficient number of leeches, and then to proceed to the use of blisters. You should direct your attention as much to the head as to the bowels, and one of the best modes of doing this is to apply six or eight leeches behind the ears, and repeat them every six hours until relief is obtained. You should then order the head to be shaved, and kept constantly covered with cloths wet with warm vinegar and water, and at the same time have recourse to the internal use of tartar emetic and nitre, or blue pill, with James's powder. Should this plan fail in giving relief, you have a powerful aid in the application of blisters to the scalp, and this must be done extensively, and at once.

Most of the fatal cases of typhus at present die of cerebral disease. But in the majority of instances you will find that these were cases in which the head was neglected, and in which the appropriate remedies were used too late. In cases treated from the commencement with judgment, decision, and attention, although the head may be threatened, you will not have one-twentieth of the mortality observed in those cases where the early prevention of cerebral symptoms has not been an object of care. One of the worst cases of cerebral disease which I have witnessed for many months, and which would have probably terminated fatally before the seventh day, I saw in consultation with Mr. Daly, and yet this case was saved by prompt and decided measures calculated to counteract the cerebral symptoms. I have also very recently witnessed another very remarkable case of this description at Bray.

The patient, a gentleman very full and plethoric, but remarkably temperate, aged thirty-five, was attacked after exposure to cold by intensely violent maculated fever, for which aperients of an active nature were exhibited. I saw him in consultation with Dr. Heffernan on the fifth day. His headache had been relieved by leeching, but his breathing was very quick, and he was almost constantly asleep. Skin very hot; eyes somewhat suffused; most copious crop of maculae. We at once blistered the whole scalp; and on

the eighth day blistered it again, and also the nape. On the ninth day the cerebral symptoms, *which we had been endeavouring to anticipate* came on, but probably our treatment prevented them from being fatal; for when they appeared, the application of tartar emetic ointment induced a purulent discharge from the whole surface of the twice blistered scalp, in the course of a few hours, and three grains of tartar emetic given in divided doses that day procured a complete cessation of the symptoms, after — mark, after — the pupils had been dilated, and one fit of slight paralysis of the mouth and tongue had taken place.

The result of all my experience in fever is, that the majority of fatal cases are rendered so, in this country at least, by severe cerebral symptoms supervening sooner or later in the disease. Delirium, sleeplessness, stupor, convulsions, extreme subsultus, jactitation, sluggish and dilated, or else extremely contracted, pupils; these are the symptoms we have to fear after the fever has lasted some time; and let me repeat it, the chief art of the physician consists not so much in remedying these symptoms as in anticipating them. When he judiciously attempts this, he may not, indeed, always succeed in altogether preventing their supervention, but he will, in the great majority of cases, be successful in diminishing their violence, and preventing their usual disastrous effects.

I shall now resume the subject of blistering in fever, on which I made some observations in my last lecture. I have spoken of it chiefly as a powerful revulsive remedy in the treatment of cerebral congestion; let us now treat of its employment with other objects in view. In the first place, as has been already explained, blisters may be used as most energetic stimulants in cases where the powers of life flag, and threaten a sudden cessation. Occasionally, in fever, you will find the vital tone reduced to a very low pitch, the heart uncertain in its action, the pulse irregular, the respiration feeble, the skin cool, and the patient so weak that he cannot be lifted up, or even turned in bed, without having a tendency to faint. Here we have to superadd to the ordinary treatment of fever the prompt exhibition of remedies calculated to meet such emergencies, and in addition to internal stimulants, we have recourse to powerful stimulation of the cutaneous surface by what are termed flying blisters. One of the best remedies in such cases is a large blister applied over the region of the heart, to be left on for two or three hours, or until the vascular action of the skin is sufficiently excited. When the patient appears to labour not only under sudden weakness of the heart, but also of the capillary and nervous systems, as shown by coldness of the extremities and sinking of the pulse, it will be necessary to apply flying blisters, not only over the region of the heart, but also over various parts of the chest, the epigastrium, and the inside of the legs and thighs. You will find this plan of treatment frequently succeed in cases which have a very unpromising aspect. I have now witnessed many instances of this description, in which, from cold, neglect, or debilitating treatment,

the patients appeared moribund, with lividity of the extremities, hippocratic face, cold skin, and failing pulse; and I have seen them saved, as it were miraculously, by the use of carbonate of ammonia, musk and wine, and the application of warm fomentations to the limbs, followed by a succession of flying blisters.

The next use to which we apply blisters is in the treatment of those pulmonary affections which arise during the course of typhus. From what you have seen of the present epidemic, you must be convinced that bronchitis is one of its most frequent complications, and that few patients pass through fever without having some affection of the bronchial mucous membrane. You are also aware, that when bronchitis attacks the more minute ramifications of the bronchial tubes, it is very apt to produce congestion and engorgement of the lung. We meet with pneumonia much less frequently in fever, but it is occasionally observed, and requires the most prompt and decided treatment. In pneumonia, as well as in congestion of the lungs, accompanied by inflammation of the smaller bronchial tubes, blisters afford us a most valuable adjunct to the other means which we employ, and admit of being used in cases where no other mode of depletion could be safely borne. The affections of the lung in fever are of no small importance, and the stethoscope has not conferred a greater benefit on practical medicine, than by indicating, in diseases of the chest, not merely the existence of disease, but also its locality, extent, and precise nature. It points out to us the portion of the chest in which the bronchial tubes are chiefly engaged, and informs us with certainty when the affection of the smaller tubes and air-cells has given rise to pulmonary engorgement. The experienced stethoscopist will in such cases be aware of the exact site and nature of the affection, where the mere symptomatic practitioner would be unable to acquire anything more than a loose and undefined notion of pulmonary disease. The latter employs his depleting means at random, and frequently abstracts a large quantity of blood with little benefit to his patient; the former, aware of the exact situation and extent of the disease, applies his leeches or cupping-glasses immediately over the engorged or inflamed portion of the lung, and relieves his patient at the expense of a comparatively small loss of blood. The same observation will apply, with equal force to the use and application of blisters. A good and accurate knowledge of the various stethoscopic phenomena is besides of so much more value in the treatment of fever, as, at certain seasons of the year, almost every case of fever will be complicated with pulmonary derangement; and it may happen, during the course of an epidemic, that the lungs may be the organs which are chiefly engaged. Although cerebral disease is at present the principal source of danger in fever, it may not be so always. A change may take place in the character of the epidemic; the cerebral symptoms which are now of such frequent occurrence may become infrequent or inconsequential, and we may have the organic affections chiefly limited to the viscera of the

thorax. I have seen many cases of fever in which the principal source of danger was connected with the chest, and where an accurate knowledge of the stethoscope was indispensable to a correct and successful plan of treatment.

Now when you have recourse to blisters in treating pulmonary affections, whether these affections be simple or complicated with typhus, it would be well to recollect that much good may be effected without leaving the blisters on for a long time, or until they rise fully; and also that when risen, it will not be necessary to cut them at once and let out the effused serum. In treating the bronchitis of children, and in the bronchial affections of fever, I have frequently directed the blister to be left unopened; and I can state, from experience, that this plan answers very well. The effused serum forms one of the best dressings for the excoriated surface of the skin, and the formation of troublesome sores is avoided. I frequently have recourse to this mode of treating blistered surfaces in children, and persons of irritable habit, in whom the cutis is extremely tender and vascular. Such persons, when blistered, will often have profuse discharges, first of serum and afterwards of seropurulent matter, from the denuded surface, accompanied by torturing pain, loss of rest, and considerable irritation of the general system. I have seen the discharge continue to flow profusely for five or six days; in fact, to such an extent as to wet several napkins in the course of a day, and expose the patient to the risk of an aggravation of the pulmonary symptoms, in consequence of his linen becoming so frequently moistened as to require repeated shifting.\* In all cases of children and persons of an irritable habit, I would therefore advise you to let the blisters alone, particularly where they have been applied to the fore part of the chest, or any other part not exposed to pressure or friction. As soon as the blister rises, apply over it a piece of lint, smeared with spermaceti ointment, which can be renewed as occasion requires, and leave the rest to nature. I was forcibly struck some time since, with the difference of result between this and the ordinary practice, in the case of a young gentleman residing in Cambden street, who had a severe attack of bronchitis towards the termination of fever. A blister had been applied to his chest in the morning, and another in the middle of the day. The first had been opened freely, and dressed in the usual way; but the other, which had risen about the time I was called in, was left untouched at my request. The one which had been opened caused such a degree of irritation and restlessness, that it was found necessary to give him an opiate every night; the other gave little or no inconvenience, and healed up much sooner. If I have done nothing better, I think I deserve some merit for being the first to reprobate the practice of keeping on blisters

\* In pulmonary diseases, this continued discharge is often very useful, and should be encouraged; but in fever the production of such an effect from blisters must be avoided, as a surface thus denuded of its cuticle and inflamed, may be converted into a dangerous sore.

for twelve, eighteen, and twenty-four hours, and for having shown, by numerous experiments, that a much shorter period of time was required to insure the full effect of these remedies. When I commenced the practice of medicine, blistering was looked upon by most sick persons as one of the severest trials of their patience, and the agony which it caused in some irritable habits was almost insupportable. Blisters were left on for twelve, eighteen, and even twenty-four hours, and when at length they were removed, the whole epidermis of the blistered part came, or was torn away, leaving behind a raw irritable surface, from which large quantities of serum and pus were effused for several days, to the great torture and inconvenience of the patient; and, not content with this, the practitioners of that time generally dressed the excoriated surface with some sharp stimulant ointment, so that the blistered surface most commonly resembled that of a severe burn. Ask those who are our seniors in practice, and they will tell you what blistering was twenty or thirty years ago. They first produced excessive irritation of the skin, by leaving the blisters on too long, they then irritated the denuded surface with stimulant ointments, and in this way brought on extensive sores of a bad character, which remained long after the disease for which the blisters were applied had disappeared, and which formed, in fact, a new ailment, requiring new medicines and additional attendance. If you look over Mr. Moore's account of the principal remedies employed in the practice of Dublin physicians, about the period I allude to, you will find that nothing was more common then than the application of stimulant and, as they were termed, digestive ointments, to blistered surfaces. I was among the first who assailed this barbarous treatment, and showed that all the good effects of blisters might be secured by leaving them on for a much shorter space of time. I proved by numerous experiments, that in many cases it was not necessary to leave them on more than four or five hours, in the adult,\* and that they might then be removed and the blistered part dressed with spermaceti ointment. Under this dressing the blister rises well, and there is no danger of tearing away the cuticle, or producing an irritable sore. In addition to this, you entirely avoid the irritating effects which blisters are known to produce on the urinary organs. You will very rarely meet with dysuria, or haematuria, where the blister has been left on for the spaces of time I have mentioned.

Blistering is, then, to be used with the restrictions I have mentioned, and you will find it a most valuable aid in the treatment of fever and its complications. It may be employed either as a derivative and revulsive, or you may have recourse to flying blisters over various parts of the body, in certain forms of fever, where there is marked and sudden depression of the powers of life.

\* Of course blisters applied to the scalp must be excepted. They require at least twelve hours. In old persons generally the skin is much less vascular than during youth or middle age; and consequently, in the old, blisters require a much longer time to produce the required effect.

Speaking of depression of the powers of life reminds me of a curious incident, which occurred some time since in my practice, and which shows the value of being acquainted with the peculiar habits and idiosyncrasies of families. I attended, with Mr. Kirby, about three years since, a gentleman of middle age and active professional habits, who had been attacked with fever. I was first called to see him on the ninth day of fever, and found him apparently moribund. His pulse was intermittent and irregular, the action of the heart tumultuous, the respiration feeble, and the extremities cool. Mr. Kirby had instantly ordered internal stimulants, and blisters over the region of the heart and epigastrium. The patient rallied, and ultimately recovered. It is to be observed, that the group of formidable symptoms just enumerated had supervened quite out of the usual course, and without any previous warning. They were consequently not only alarming but unexpected. About a month afterwards Mr. Smyly and I were called to see this gentleman's brother, who was living at Dundrum, and who was supposed to have caught fever from his close attention to his brother during his illness and convalescence. What was most remarkable in the case, was, that his pulse began to flag and intermit, and he likewise suddenly and unexpectedly got the same symptoms of depression of the vital powers on the very same day and hour as his brother. His symptoms also continued for the same length of time, and yielded, or spontaneously ceased, under the same plan of treatment. In some families you will find a very curious coincidence between the play of the various functions in diseases as well as in health, and you should neglect no opportunity of making yourself acquainted with the family peculiarities and idiosyncrasies of your patients, as knowledge of this description is of the greatest value and importance in the treatment of disease.

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## LECTURE VIII.

Glanders and button-farcy in the human subject — Particulars of a case of glanders, with the post-mortem appearances — Remarks on the variety of skin diseases produced by the introduction of an animal poison into the system — Case of button-farcy — Analogous appearances, where, as in typhus, an animal poison is sometimes generated in the body — Furuncular inflammation, or carbuncle, generated by animal poison ; also tubercles — Sometimes a preternatural whiteness precedes the purple hue of mortification — Remarks on phlegmasia dolens — Phlegmasia dolens of the eye.

In pursuance of my intention, as announced in a former lecture, I shall proceed to-day to the consideration of two affections resulting from animal poison, one of which has been but recently introduced to the notice of the medical profession ; of the other, I am not aware that there are any published cases in existence. I allude here to glanders and button-farcy in the human subject.

The profession is chiefly indebted to the researches of Dr. Elliotson for the first accurate account of glanders in the human subject — a disease which has now excited a very large share of attention here and on the continent. Many other observations, published since Dr. Elliotson undertook the illustration of this disease, have established the fact, that the morbid matter secreted by horses labouring under glanders may communicate the infection to the human subject, and thus give rise to a loathsome, painful, and generally fatal disease. From the notices which I have been able to collect, it appears that glanders in man is of very frequent occurrence in Ireland — so frequent, indeed, that I think the legislature is called on to imitate the wise example of the Prussian government in placing glandered horses under the surveillance of the police.

Like many other animal poisons, that of glanders does not seem capable of affecting every individual indiscriminately; indeed, the average susceptibility must be small, for grooms and veterinary surgeons take few or no precautions in examining the diseased animals; and yet the proportion infected, compared with the number exposed, is by no means considerable. That such persons exhibit great carelessness in examining glandered horses, appears from the directions given in books on farriery, "that the finger should be introduced into the nostrils for the purpose of ascertaining whether certain spots suspected to be ulcers are so or not." Now, when the viscid gluey nature of the discharge from the nostril is taken into account, we cannot but conclude that this operation of introducing the finger into such a mass of vitiated and poisonous secretion would more frequently prove the means of infection, were the human constitution very susceptible of the poison — for we are to recollect that the fingers of such persons are seldom free from scratches and abrasions.

I shall now read the following case of glanders in the human subject. It is one of extreme interest, and has been most faithfully and graphically detailed. It occurred in the Richmond Hospital, and has been communicated to me by Dr. M'Donnell. You will find in it many points of resemblance to a series of cases translated from a German journal, and published in a late number of the Medico-Chirurgical Review.

Patrick Wallace, a healthy muscular man, aged twenty, was admitted into the Richmond Surgical Hospital on the 6th October, 1836. It was stated that he had been in care of a glandered horse — driving, cleaning, &c. — and that he had been in the habit of drinking out of the vessel from which the horse drank. It appeared, also, that he had had an abrasion on one of his ears. On admission, he had much of the appearance of a person labouring under *cynanche tonsillaris*: he could only open his mouth to the extent of half an inch; this was the only uneasiness complained of. The left tonsil was very much enlarged, red, hard, and projecting towards the middle line; no fluctuation could be felt; there was a general fulness about the angle of the jaw, extending upwards

nearly as far as the zygoma. The sub-maxillary gland on the same side was also enlarged and indurated. These symptoms had been ushered in by feverishness, a few days previous to admission. He was ordered to have eight leeches to the throat, to be followed by a poultice, and a bolus composed of calomel and jalap.

Next day the external swelling was found to be increased ; greater difficulty of opening the mouth ; the tonsil still hard and swollen. Twelve leeches were applied to the fauces, and the patient took the tartar emetic mixture of the hospital, with sulphate of magnesia.

On the 15th of October, the disease is reported to be on the increase. Tonsil still hard, but no fluctuation ; left side of the face greatly swollen ; eye of same side nearly closed, from tumefaction of the lids ; general inflammatory appearance over the cheeks, and great hardness of the tissues about the angle of the jaw of the same side, extending towards the chin ; several circumscribed spots of redness, varying in extent from the size of a sixpence to that of a halfpenny, with irregular margins, scattered over different parts of the body ; two pustules observable on the left leg.

16th. — A vesicle containing a yellowish serum observable on the left tonsil ; the same inability of opening the mouth continues ; increase of swelling over the left side of the face ; a small abscess has formed on the posterior part of the left fore-arm ; some delirium during the night : three evacuations from the bowels. The tonsil to be brushed over with a solution of nitrate of silver ; a blister to the fauces ; the tartar emetic mixture to be continued.

17th. — Some sleep during the night, interrupted by delirium of a low muttering character. Patient appears willing to answer questions, but cannot, from obstruction in the mouth. This, however, lasts but for a moment, and he then lapses into a state of incoherency. Mouth open to the extent of half an inch ; left eye closed ; considerable swelling of the left side of the face, which is indurated, hot, tense, and shining ; all the glands on both sides of the jaw, but particularly on the left, are swollen and hard ; same state of tonsil ; nares dilated ; breathing stertorous, somewhat hurried, about 28 in the minute, and interrupted by frequent sighs. Pulse very small, rapid, intermittent, and cannot be counted ; skin hot, tongue furred, teeth covered with sordes. He complains of great thirst, but says he feels no pain ; it is evident, however, that he feels great uneasiness in the joints and limbs when moved. There is, however, no swelling or redness of the joints ; there is no discharge from the nostrils, nor is there any perceptible ulceration of the mucous membrane of the nose. No apparent affection of the absorbent glands in any other part of the body.

During this period, vesicles and pustules of various sizes, and at various stages of growth, had made their appearance on different parts of the body, particularly on the back. They varied in size, from the head of a pin to the section of an almond. In the first stage, they resembled very minute vesicles, scarcely surrounded by any inflammatory border, and containing a limpid serum. In the

second stage, the serum was replaced by pus; there was a considerable blush of redness around each pustule, which at this period became greatly increased in size. When one of the vesicles was punctured, the serum appeared to come from a single cavity under the cuticle: this operation did not produce any subsidence of the tumour, a considerable hardness still remaining in the cutis or beneath it, with a cavity in the centre in which the serum was contained. A number of achores existed in various parts, congregated together, and not much larger than the head of a pin. These clusters were surrounded by *white raised margins*, having much the appearance of wheals, and about a line and a half or two lines in breadth; between these margins and the achores there existed a line of redness. The whole taken together are rather of an oval shape. There also existed numerous inflammatory spots on the right shoulder, left arm, and other parts of the body. These were of a dark brown, approaching to a livid colour; when pressure is made on them the colour disappears, but returns immediately when it is removed. On running the finger over them, a small hard tumour was felt in the centre; the margins of these spots were irregular.

On the 17th, the character of the disease became more plainly developed: at three o'clock, P.M., pus in considerable quantity was observed to issue from both nostrils. The patient was ordered to take the solution of chlorate of soda internally, in dram doses, three times a day; and also a mixture composed of carbonate of ammonia, liquor aetheris oleosus, and camphor mixture. At 5 o'clock, P.M., he was found half out of bed, his head resting on the pillow; still able to express his wants; pulse not to be counted; legs and feet cold; breathing stertorous; numerous stigmata scattered over the surface of the body. The purulent discharge from the nostrils has ceased, but there is a discharge of mucus from the mouth, with considerable fetor of breath.

8 o'clock, P.M.—A copious perspiration has broken out over the body; face red, tense, shining, and very much swelled; swelling has now extended to the right side of the face; right eye nearly closed; can open the left better; a few pustules have made their appearance at the inner canthus of the eye. Pulse, tongue, and skin, as in last report; delirium and muttering continue.

Died at 4 o'clock, A.M., October 18th.

On examining the body ten hours after death, the redness was found to have disappeared from the face; the glands about the left angle of the lower jaw as before mentioned: they were found matted to the surrounding parts. The cellular tissue covering the submaxillary and parotid glands was infiltrated with serum, and indurated; numerous depositions of pus were found in the tissue of the submaxillary and parotid glands. The brain was firm, but its ventricles contained a considerable quantity of fluid; the arachnoid membrane was opaque in many places; several patches of vascularity were observed on the pia mater. The lungs presented

a congested appearance; numerous pustules were scattered over their surface—some separate, yellow in the centre, and surrounded by an ecchymosed border; others existing in clusters. They resembled, in every respect, those found on the surface of the body. The lining membrane of the larynx was very much inflamed, especially about its upper part and about the epiglottis. The inflamed parts in this situation were of a livid hue. There was some appearance of vesicles in the trachea, but this could not be satisfactorily ascertained. The bronchial tubes were filled with mucus. The stomach contained a quantity of yellowish-green mucus; its lining membrane presented an ecchymosed and inflamed appearance. The liver was somewhat enlarged, and adhered by its inferior margin to a few folds of intestine. The periosteum did not exhibit any appreciable deviation from the normal state.

One of the chief things to be noticed in the foregoing case is the variety of inflammatory affections observed in the skin as the result of the introduction of an animal poison into the system. There was, in the first place, the general diffused redness of the face, then superficial inflammatory spots on the shoulders and arms, resembling erythema nodosum; in the next place, scattered pustules of various sizes, commencing in the form of a vesicle, which afterwards became a pustule surrounded by an inflammatory zone; and lastly, aches congregated together and surrounded by an elevated white margin, within which there existed an inflammatory ring of a red colour. Another point worthy of notice is the state of the lungs and bronchial mucous membrane. The lining membrane of the larynx, particularly in the vicinity of the epiglottis, was inflamed and of a livid colour, and there was an indistinct appearance of vesicles in the trachea. But what was particularly deserving of note in the lungs, was the existence of pustules on their surface, bearing the closest resemblance to those found on the surface of the body. It is not stated whether there was any appearance of vesicles or pustules in the nose, pharynx, or oesophagus, but we are told that the stomach was ecchymosed and inflamed.

The following case was witnessed by myself and Dr. Halahan, and seems more nearly allied to the variety of glanders termed button-farcy. I regret that want of time has prevented me from arranging its details in a form more worthy of your attention; and were not the disease one of comparatively rare occurrence, I should not have ventured to lay the case before you in its present imperfect state.

The subject of this case was a gentleman residing at Rathmines, an extensive proprietor of horses, and who, having originally graduated as a surgeon, exhibited much skill in the veterinary art. About the time of his illness he had had some horses in his establishment labouring under glanders and button-farcy, to which he paid particular attention. After having laboured for some days under considerable lassitude and derangement of the stomach and bowels, he was attacked, on the 8th of July, with rigors, followed

by great thirst, excessive heat of skin, and pains in his limbs. The moment he felt himself attacked in this way, he said he was sure that he had got some dangerous infection from the horses, and would never recover. He took some blue pill and colocynth, which produced a few dark and very fetid evacuations. On the 9th, his pulse was 94, his urine very high coloured, his thirst and feverish symptoms rather increased, and he suffered greatly from constant nausea and vomiting. A tumour now began to appear about three inches above the inner ankle of the right foot. He applied a poultice over it, but was obliged to remove it in a short time, in consequence of the pain occasioned by its weight. The tumour was about the size of half a walnut, of a dull red colour, tense, shining, and exquisitely painful. Its external aspect was peculiar, and might be compared to something intermediate between a boil and a spot of erythema nodosum. On the 10th, another tumour of the same character appeared near the outer ankle of the same leg; and in this way the disease went on, tumour after tumour appearing on different parts of the body, with an increase of the feverish symptoms, until the 20th of July, when he was first seen by Dr. Halahan. At this time several tumours had appeared on different parts of his body; there was one of an extremely painful character on his head, and he complained of great tenderness and pain along the right clavicle. His thirst was still urgent, his restlessness excessive, the slightest motion gave him exquisite pain, and sleep had completely abandoned him. He had endeavoured to regulate his bowels by purgative medicines, and had applied leeches to the tumours and to the clavicle at various times, but without any decided benefit. There were eight or nine tumours on different parts of the body, of the character before mentioned, without any tendency to suppuration, and so exquisitely painful that he could only bear a single sheet over him. The inflammation about the clavicle, which was of a diffuse character, had extended up the neck and over the right shoulder; there was not much swelling, except about the clavicle; the colour of the affected parts was a peculiar dusky red. Immediately over the clavicle two vesicles were observable, filled with a transparent fluid. Three dozen leeches were ordered to be applied over the clavicle and shoulder, and the patient was directed to use chicken-broth, beef-tea, and other light nutritious articles.

On the 21st, all symptoms are stated to be on the increase. His fever, thirst, and sleeplessness, are undiminished; his tongue furred and dry; his teeth covered with sordes; his pulse small, weak, and rapid; his nausea and vomiting not so troublesome. He had received no benefit from the application of the leeches; the swelling and stiffness of his neck was increased, and he had now some difficulty of swallowing. The erysipelatous surface of the neck, clavicle, and shoulder, were lightly brushed over with lunar caustic, which gave the patient an agreeable sensation, and from which he stated that he derived much relief. This was repeated the next

day at his own request, and with equal benefit; the difficulty of deglutition diminished, and for two days he went on pretty well. On the 25th, there was an evident increase of fever; the tumours over the body and limbs were increasing in size and number; and his anxiety, restlessness, and sufferings unabated. He had taken alterative doses of calomel and James's powder, and his bowels had been regulated by mild aperients and enemata. I saw him for the first time on the 28th. His pulse was then 98, small, and easily compressed; his thirst excessive; his restlessness and agony such as would strongly excite the pity of persons most conversant with scenes of human suffering. He had several tumours over different parts of his body, all exquisitely painful, and in their aspect something between boil and erythema nodosum. Some of them were hard to the touch; others, which appeared more advanced, were softer, and had a boggy feel. There was, however, no appearance of anything like suppuration. He was ordered sulphate of quinine, chicken-broth, ale, and other light nourishment, and an opiate at night. On the 31st, a tumour appeared on the right side of his forehead, larger and more painful than any of the rest. Another of a similar character showed itself on the right clavicle, which had been previously affected. Shortly after their appearance, vesicles were observable on their surfaces, such as generally precede mortification in cases of anthrax and malignant carbuncle. Next day he was evidently worse; his pulse was 108; his fever, pain, and restlessness, unabated; and a miliary eruption began to make its appearance over his chest and abdomen. The vesicles now began to increase on the surface of the tumour; his fever and restlessness were aggravated; and his mind, which had been hitherto collected, began to wander. His restlessness was so excessive, that he could not remain for a moment in the same position; and being a person of much mechanical ingenuity, he had a set of pulleys constructed and fastened to his bedstead, so that he could move himself in various directions. His medicines and diet, with the addition of claret, and opiates at night, were continued as before.

On the 6th of August he was still worse; the tumour on the head continued to enlarge, and decided sloughing had taken place. The tumour on the clavicle presented the same aggravation in appearance and character, and a fresh tumour had appeared on the back of his head. A pustular eruption now began to make its appearance over his body, chiefly over the abdomen and limbs; his symptoms became aggravated in every respect; the delirium and watchfulness increased; and he died on the 10th of August, about thirty-three days from the commencement of the disease. He attributed his illness to attending horses, four of which had died of button-farcy; and what is also curious, his nephew, who had also been engaged about the diseased animals, had fever of a typhoid character, with petechiæ of a larger sort than usual, but ultimately recovered.

The symptoms of glanders in the human subject have been so

fully detailed by Dr. Elliotson and others, that it only remains for me to make a few observations connected with this subject. In the first place, it may be observed that most diseases produced by the deleterious effect of animal poisons on the economy, show a tendency to cause not only fever, often of a malignant character, but also various forms of external disease, chiefly limited to the superficial gland, subcutaneous cellular tissue, and skin. In urticaria, small-pox, and measles, the external disease is chiefly limited to the skin; in scarlatina, we have often swelling of the parotid gland, with infiltration of the adjacent cellular tissue in addition to the cutaneous eruption; in syphilis, and cases of dissecting wounds, we have disease of the skin frequently combined with an affection of the superficial lymphatic glands. The same observation applies to typhus, many cases of which are characterised by an eruption of spots over different parts of the body, or by the occurrence of what are termed petechiae. On these matters I need not enlarge, as you are all well acquainted with them; but that vesicles and pustules very similar to those observed in dissection wounds, and other diseases produced by the direct introduction of animal poison into the system, may arise from the action of morbid changes spontaneously occurring in the body, is a fact which admits of being proved, and opens to us a new and interesting field of inquiry. Thus, in cases of typhus, where the effect of pressure or some other accident has occasioned bed-sores of a bad character, and even where there are no bed-sores present, I have on several occasions seen low secondary fever produced, and have observed vesicles or pustules appear on the skin, similar to those described by Mr. Colles as accompanying the fever of dissection wounds. An example of this occurred some time ago at this hospital, and you have recently witnessed another in the case of a young man recovering from typhus. It might be argued that the secondary fever and eruption in such cases arise from the absorption of morbid matter into the system, and I am willing to admit that there is some colour of argument for this statement, where the patient labours under bed-sores of a bad and gangrenous character; but that this explanation is not the true one appears from the case of the young man to which I have alluded. He had no bed-sores to account for the secondary fever and eruption; and we can only explain by supposing that it is the result of a poison generated in the system during the course of fever. This is particularly deserving of notice, as I am not aware that any author on typhus has noticed this symptom, or pointed out the circumstances under which it occurs. The same phenomenon is occasionally observed, where, in consequence of external injury, diffuse cellular inflammation has taken place. Thus, several years ago, a woman was admitted into the Meath Hospital, who had diffused cellular inflammation in consequence of receiving a kick on the chest. After a few days, Colles's pustules appeared on different parts of the body, and she died with symptoms of croup. On dissection the croupy symptoms were found to depend on an eruption of vesicles filled with

opaque serum, over the lining membrane of the larynx and trachea. Something analogous to this was observed in the case of Wallace; and the coincidence is further strengthened by the frequent occurrence of disease of the lining membrane of the larynx and trachea in many other febrile affections accompanied by cutaneous eruption — as small-pox, measles, syphilis, and scarlatina.

Another point which is deserving attention with reference to the phenomena of external disease, in cases where animal poisons have been generated in the system or arisen from infection, is the occurrence of tumours in different parts of the body, partaking of the characters of furuncular inflammation or carbuncle, and running through a somewhat similar course. These tumours formed a very prominent feature in the case of Wallace; and in the gentleman who laboured under button-farcy, they constituted one of the most important symptoms of the disease. We also observe something similar to this in that form of venereal which Mr. Carmichael terms tubercular, and which is characterised by the appearance of small, hard, dark red tumours, on various parts of the body, which exhibit a very imperfect tendency to suppuration, and frequently give rise to sores of a bad and unfavourable character. Another circumstance observed in Dr. M'Donnell's case deserves some share of attention; I allude to the white elevated margins, like wheals, around the redness which more immediately encircled each cluster of aches, and which we are to look upon in a less advanced stage of its progress, being as it were only the first stage of the latter. It is a curious fact, that on many occasions a preternatural degree of whiteness precedes the redness and congestive purple hue which ushers in mortification. This is generally known in the case of the nose when frost-bitten, and which always appears preternaturally white in the commencement. Something analogous to this was observed in some cases of bad typhus treated here in 1826 and 1827. The nose sometimes assumed a peculiar white colour, and not unfrequently exhibited a tendency to mortification. When first seen it had a preternatural whiteness, and looked very like a nose made of white wax; in the course of a few hours it changed to a purplish red, and exhibited symptoms of approaching gangrene. Again, in urticaria, we often see some portions of the inflamed skin assume a white colour, and the same occurrence may be noticed likewise in the wheals caused by nettles or the stings of bees. In general, we connect the idea of integumental inflammation with the appearance of redness; and this phenomenon is explained on the hypothesis that a preternatural quantity of blood is circulating in the inflamed parts. How, then, are we to account for the facts I have mentioned? To what cause are we to attribute the co-existence of increased vascularity, and a remarkable whiteness or pallor of the parts? — a state displayed in a very remarkable manner in *phlegmasia dolens*. I think the explanation is not very difficult, when we recollect that the capillary vessels of the white tissues of the body contain no red blood in their healthy state. It is easy to conceive that in certain stages of inflammation the quantity of

serous or white blood circulating in any of these tissues may be suddenly much increased, and that this increase may be accompanied by all the phenomena of inflammation except redness. In certain cases, as *phlegmasia dolens*, the colour is permanently white; in other cases the white is exchanged for redness, when the inflammation has increased in intensity: but perhaps we should not use this expression, for the phenomena of *phlegmasia dolens* prove that a *white inflammation* may be quite as intense as *red inflammation*,—a fact which I saw exhibited in a remarkable manner in the case of a woman in this hospital, labouring under *phlegmasia dolens*, and in whom the disease suddenly attacked the eye, and destroyed it in a short space of time—disorganising it rapidly without the supervention of any redness during this destructive process. *Phlegmasia dolens* of the eye constitutes a disease never before remarked in that organ, and its occurrence and phenomena were peculiarly valuable in explaining the true nature of that remarkable disease. Having already published an account of this case, I shall not at present enter into further details, but merely state that the woman affected laboured under well-marked *phlegmasia dolens* of the leg, occurring after delivery, and that the disease of the eye came on very suddenly, and was accompanied by agonising pain and exquisite tenderness in the conjunctiva covering the sclerotic. This membrane was in a very few hours tumefied, and distended in its subjacent cellular tissue by a perfectly colourless effusion of fluid, apparently sero-gelatinous, and which raised up the membrane itself so as almost to conceal the cornea from view. In the course of the day the internal structures of the eye became engaged, and vision was speedily destroyed. This case appears conclusive against the doctrine that *phlegmasia dolens* depends on inflammation of the veins. I am sorry that Mr. Middlemore has failed to notice *phlegmasia dolens* of the eye in his late admirable work on the diseases of that organ.

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## LECTURE IX.

On the use of emetics at the commencement of fever; not so well adapted to a later period—Domestic remedies for feverish colds; these colds prove to be fevers, and time is lost—Protest against the abuse of purgative medicine in fever—The idea of curing fever by purging is absurd—Treatment where the bowels have become almost paralysed from the cure of preceding diarrhoea—Venesection as a means of checking fever—Beneficial even within the first twelve hours after seizure by typhus—Various cautions respecting leeching and cupping-glasses—Mode of applying leeches when pneumonia or hepatitis supervenes on fever.

I HAVE already observed that it is not my intention to give a regular sketch of the practice to be adopted in the treatment of typhus. I have designedly passed over many important points, being unwilling to trouble you with any observations on practical matters in which my opinions coincide with the latest and best

authorities. I shall therefore touch very briefly on the subject of emetics in fever, as the rules by which the administration of these remedies are regulated have been laid down with precision by many modern writers. I am not in the habit of using emetics in fever, except when called in at the very commencement of the disease. Here emetics are of great value, and will often succeed in stopping the fever. There is no way in which you would be more likely to cut short an attack of fever than by the administration of an emetic, if you chance to see the patient when the fever is just beginning. I speak here without any subterfuge, and without grounding my opinions on the results of doubtful or merely suspicious cases. I speak not of cases of bad feverish cold, in which the symptoms, at the commencement, bear a very strong analogy to those which usher in typhus; I speak of cases where the patient gets rigors, followed by the usual symptoms of feverish excitement, after exposure to contagion, and is seen on the evening of seizure. If I were called to visit a patient who had been attacked with shivering, headache, quickness of pulse, increased temperature of skin, and lassitude, during the prevalence of an epidemic, or after exposure to contagion, and happened to see him a few hours after the attack, I should certainly bleed him, and administer an emetic; and I think he would have a very good chance of escaping the disease. I think the exhibition of emetics an excellent practice in the commencement of fever, but I must observe, that the period of their exhibition is very brief. After the lapse of twenty-four or thirty-six hours from the occurrence of the rigor, they will not succeed in cutting short the fever. A few hours make a vast difference in the chances, and after the lapse of twenty-four hours, there is, generally speaking, very little hope of extinguishing the disease. At the termination of this period, it has in most cases seized hold of the constitution too firmly to be shaken off by an emetic, even though aided by bleeding. But for the first few hours after seizure, the plan I have mentioned affords you a reasonable hope of being able to put a stop to the mischief at once. Army surgeons, and practitioners who have opportunities of treating incipient disease, are well aware of the truth of these observations. I have myself witnessed many cases, in private practice, of medical men and students, who had been attacked with symptoms of fever after exposure to contagion, and who escaped by taking an emetic, and being bled in proper time.\*

Except at the commencement, I am not an advocate for the use of emetics in fever. They fail in checking the disease, and they are apt to be followed by considerable debility of the stomach and general system — states which it would be better to avoid, where the patient has to run through the course of a long and exhausting

\* [In the epidemic at the Philadelphia Hospital in the year 1836 it was found that emetics were of great benefit, and diminished the violence of the fever; their power in cutting short the disease when it had fairly taken hold was not so well ascertained. One of the best emetics is the infusion of eupatorium. —*Ed.*]

disease. If called to a case of fever in which you cannot give an emetic, there are two or three other remedial agents you may employ to moderate the feverish excitement, and render the disease milder and more manageable during its progress. One of these is James's powder, with which you may combine blue pill or hydrargyrum cum cretâ, if necessary, giving two or three grains of each every third or fourth hour, according to circumstances. Another remedy, which many are in the habit of using, particularly where the fever is accompanied with symptoms of inflammatory excitement, is a weak solution of tartar emetic. Two grains of tartar emetic may be dissolved in a pint of barley water, and of this mixture a table-spoonful may be taken every second hour. These are good and useful remedies in the first stages of fever; they moderate the feverish excitement, act gently on the bowels, and produce more or less diaphoresis.

It most commonly happens that the physician is not called to see a case of fever until forty-eight hours, or perhaps three or four days, have elapsed, from the period of seizure. In this climate, feverish colds are extremely frequent; and as their symptoms bear considerable resemblance to those of incipient fever, and very few are capable of making a distinction between them for some time, a person attacked with fever usually regards it, at the first onset, as the result of cold, and expects to be able to alleviate or remove it in a few days by bathing his feet and taking a warm drink at night, with, perhaps, some opening medicine on the following morning. The usual period, however, at which the feverish cold had been accustomed to decline, passes over without the expected amendment, the patient feels himself weaker and worse, the conviction is brought home to him that his disease is something more than an ordinary cold, and he sends for a physician about the third or fourth day. Now at this period, I believe, you must be content to let the fever run its course; for it has taken root too deep to be expelled by a *coup de main*, and yet many persons seem to think they can still succeed by what they term bold and decided treatment. The mode which they generally adopt is, first, to administer an emetic, and then to have recourse to copious and continued purgation. This leads me to say a few words on the use of purgatives in fever.

The abuse of purgatives, particularly in the first stage of fever, continues, I am sorry to state, even to the present day, a blot on the character of practical medicine. Large doses of calomel, and vegetable purgatives, in the form of pill or bolus, and followed up by draughts composed of infusion of senna, Epsom salt, and electuary of scammony, form the chief part of the treatment in fever with too many practitioners. I know well that this is a mode of proceeding too commonly employed, and I have frequently heard those who adopt it, when questioned as to the remedies they have used, declare, with much self-satisfaction, that the patient's bowels have been well cleared out. This, I believe, is a very common

mode of treating fever in the incipient stage ; and though there can be no objection to the administration of a purgative, as a cautionary measure, particularly where an accumulation of faecal matter in the bowels is suspected, I must confess that my experience does not authorise me to say, that fever can be either checked or mitigated by continued purgation. If active purgation does not check fever in the commencement, what benefit, then, can be expected from it ? People will tell you that full purging must act beneficially in two ways ; by unloading the bowels, and by evacuating the general system. With regard to evacuating the bowels, I think it can be done well and sufficiently by the use of mild aperients. It is seldom necessary to give active purgatives, and we never have occasion to continue their employment from day to day. The bowels, I repeat, can be sufficiently unloaded by the exhibition of mild aperients and enemata, and even these will seldom be required more than once or twice in the commencement, and occasionally during the course of the disease. The second question (in reference to the use of purgatives as general evacuants) is, whether it is prudent or safe to act antiphlogistically on the system through the medium of the intestinal canal, during the first stage of fever ? My opinion is, that it is not. I grant that the administration of active purgatives is followed by a copious evacuation of the fluid secretions of the intestinal canal, and that in this way you deplete the system to a very considerable extent. Admitting all this, and, moreover, that depletion is required, still I am of opinion that this is not the best way of effecting it, and shall always give a preference to the action of other remedies. I prefer the action of James's powder, or tartar emetic, or nitrate of potash, or leeches, or, in fact, any remedy which will act with less risk of subsequent mischief. I have observed that the abuse of active purgatives in the commencement of fever — nay, even the exhibition of cathartics two or three times, in the beginning of fever, in persons with irritable bowels, is very apt to induce excitement of the gastro-intestinal mucous surface, giving rise to early and profuse diarrhœa, tympanites of a bad and unmanageable character, and not unfrequently to disease of the mucous coat of the digestive canal. Great tenderness of the belly, meteorism, and exhausting diarrhœa, are the general consequences of early and continued purgation. In private practice I can generally tell, by examining the patient's belly, whether he has been actively purged in the commencement of the disease or not. I invite you to study the cases that come before you in hospital, with reference to this point ; I think you will find, in most instances, that the patients who have escaped active purgation before admission, will get through the disease with little or no tympanites. The physician who merely employs mild aperients and enemata — who does not use active purgatives from day to day, as is too often done — will not have his plans of treatment embarrassed by the occurrence of dangerous tympanites, or obstinate and debilitating diarrhœa ; nor will he have the melancholy prospect

before him of having an inflammatory affection of the gastro-intestinal mucous membrane to treat, at a period when neither the condition nor the constitution of the patient will bear anything like antiphlogistic measures. As to purging in general, the idea of curing fever by it is quite absurd. In fever, all the secretions are affected, and it would be idle to think of altering and improving all by acting on the bowels. Take the skin, for example. Consider what a departure there is from the normal state; observe the quantities of moisture which exude from it without any apparent cause, or its equally inexplicable dryness. Its odour, its feel, its nervous and vascular conditions, are all more or less altered. Take the lungs, in the next place. There is generally some change in the smell of the patient's breath; there is some change also in the quantity of the pulmonary exhalation; there is an alteration in the rate and mode of respiration; and I have ascertained, by experiment, that a person in fever does not consume as much oxygen, or give out as much carbon, as he would in a state of health. Observe the functions of the brain, or those of the liver or kidneys, and see how much they have departed from the normal state. Every secretion, every function, is more or less deranged, and will remain so as long as the fever lasts. You have no right to think that you will be able to restore the healthy state of the stomach and bowels any more than that of any other organ. The secretions of the lungs, liver, pancreas, kidneys, stomach, and skin, are all deranged, or more or less suppressed, and will not be restored to a healthy state until a crisis comes on, or the disease begins to decline. As long as the belly is soft and fallen, and where the bowels have been sufficiently opened in the commencement of the disease, I do not feel the least anxiety if the patient remains without having a stool for two or three days. I have, on some occasions in private practice, been induced to consent to the exhibition of a purgative where I did not think it required; and have seldom done so without regretting it afterwards. The patient has been going on well, the belly soft and fallen, no tenderness present, and no distinct evidence of faecal accumulation. All this I have pointed out to the practitioners in attendance with me, but to no purpose. They would generally observe, in reply, "Oh! this may be all true; but you see the patient has had no stool for the last thirty-six hours, and it would be quite wrong to let him go on in this way any longer." Indeed, you will frequently meet with cases in which you should exercise much caution in the administration even of enemata. An illustration of this remark occurred to Surgeon Ferrall and me lately in practice. In a case of fever in which the patient's friends were importunate as to the necessity of opening the bowels, the ordinary purgative injection was prescribed. It proved too active, and produced much irritation of the bowels, giving rise to an increased secretion of gas into the intestines, and a considerable degree of temporary tympanites.

You will be guided, therefore, in the administration of purgatives,

not by the rule of those who are not satisfied with less than two or three motions in the day, but by the circumstances and exigencies of the case ; and you will be cautious in giving purgatives, except where you have good reasons to conclude that there is an accumulation of faeces. In this way you will avoid tympanites, diarrhoea, and inflammatory affections of the bowels ; symptoms which always give great annoyance to a practitioner, and tend greatly to embarrass his practice in the treatment of all fevers of a typhoid character.\*

So far concerning the administration of purgative as a cure for fever, or as a means of diminishing its violence. You perceive that I think their employment more than questionable, and in this particular am consequently at issue with Hamilton, and a great number of writers. There are, however, circumstances which may arise during the course of typhus, and may require a free use of purgative medicines ; we are then forced to have recourse to purgatives, not in the hope of curing the fever itself, but for the purpose of removing or alleviating certain superadded symptoms. It may be well to mention some of the chief of these symptoms. One of the most common is determination of blood to the head, producing delirium, headache, &c., &c. In many examples of this nature, occurring at an early period of typhus, purgatives of a very active nature are amongst our most efficacious remedies. Nay, even in the advanced stages of fever, delirium and determination to the head are seldom relieved by tartar emetic, unless it produces very copious, yellow, watery stools. Many patients become uneasy and restless at night, in the latter periods of fever, in consequence of insufficient evacuations from the bowels ; whenever, therefore, restlessness or sleeplessness supervene unexpectedly, and that the bowels are confined, the occurrence of these symptoms call for aperients, even though the belly be not very full and tumid. Supernatural fulness of the belly, and tympanites, often demand purgatives at every period of the disease. In some cases, when a troublesome diarrhoea has yielded to astringents, a very obstinate and long-continued state of constipation comes on, apparently connected with impaired muscular power of the intestinal tube. At first, this confinement of the bowels produces no uneasiness on the part of the medical attendant, inasmuch as it is unattended by any fulness or tension of the abdomen, and the patient may, in other respects, appear to be doing well. After some days, however, it is judged prudent to excite alvine evacuations, which is attempted cautiously, for the practitioner bears in mind the violence of the previous diarrhoea. He therefore chooses mild purgatives at first, and next day, finding them ineffectual, he ventures on the exhibi-

\* [Dr. Graves is fully sustained in these views by the results of our experience in this country. Laxatives are very beneficial, purgatives are rarely so, and may be positively mischievous unless the strength of the patient is very good, and there is much congestion of the brain. These remarks must not be applied to the southern miasmatic fevers, or even to typhoid fever. We speak only of pure typhus.—*Ed.*]

tion of more active medicines, and orders a frequent repetition of injections. Even these steps fail, and constipation continues for several days after the efforts to remove it have been commenced. This is a juncture full of difficulty. In such cases much caution must be used in employing active cathartics, and great care should be taken to remove any accumulation of hardened fæces which may have accumulated in the rectum or sigmoid flexure of the colon. This must be done partly by the finger, or by means of an appropriate scoop, as, for instance, a narrow-spoon, and by ejecteds of soap and water. When no such mechanical obstructions exist, to account for the failure of the cathartics, we must proceed cautiously, and not rashly accumulate medicines of this description in the stomach and bowels of the patient. Very active purgatives, though they fail to stimulate the paralysed bowels so as to evacuate their contents, may yet irritate the intestinal mucous membrane, and cause destructive inflammation. For this reason, where moderate doses of eolocynth, gamboge, jalap, scammony, rhubarb, &c., have failed, they must not be repeated; neither, except in desperate cases, ought we to administer croton oil internally. The neutral salts, senna, magnesia, and above all, castor oil, given combined with spirits of turpentine, or uncombined and very frequently repeated, must be our chief internal medicines. In some cases, the compound decoction of aloes, with small doses of sulphate of magnesia, will succeed in exciting the paralysed bowels to action, where other and more powerful purgatives have failed. Injections should be perseveringly repeated, and varied both in quality and quantity; and they should be always thrown as far as possible into the bowels, by means of a flexible tube and Read's syringe. When they are retained, and excite swelling of the belly, as too frequently happens in these cases, we must desist from their use.

This obstinate state of constipation may be supposed to depend on a degree of paralysis of the bowels; for usually in such cases an evident paralysis affects the bladder, causing retention; or its sphincters, giving rise to an involuntary dribbling of urine.

On the subject of bleeding in fever, I have but very few remarks to offer. In the first place, with respect to the power which venesection possesses of checking fever, it may be observed, that there can be no doubt that it has frequently been found capable of effecting this purpose, particularly where it has been properly employed, and in conjunction with other means. I speak here with reference to cases in which bleeding has been used under favourable circumstances, and very soon after seizure — as in students, medical practitioners, hospital attendants, soldiers, and seamen. In such persons, and others whose circumstances have been equally favourable, there is no doubt that venesection has frequently succeeded in cutting short fever; and if called to a case of typhus within the first ten or twelve hours after seizure, I should have no hesitation in having recourse at once to venesection, followed by an emetic; and my own experience convinces me that I should afford my

patient a very good chance of escaping the disease. I have on several occasions succeeded in arresting the progress of fever by these means; and the records of naval and military practice furnish many proofs in corroboration of my statements. I have also the authority of Dr. Cheyne (whose experience in every point connected with fever was immense) in favour of the efficacy of bleeding in commencing fever, as a mode of treatment which has frequently proved successful in his hands. But it is only in the very commencement, and almost only during the stages of rigor, that you can hope to derive any advantage from venesection in cutting short an attack of fever. I do not mean to say that you have in typhus, as intermittent, distinct rigors, lasting each for half an hour, or even longer; by the stage of rigor in typhus, I mean to designate the period of formation, during which the patient complains of recurrent chills, although his skin feels hot to the touch when examined by another person. This stage lasts generally from twelve to twenty-four and in a few cases to thirty-six hours; and it is only during this stage that you have a chance of extinguishing the fever at once, by the abstraction of blood from the system.

You may also have recourse to venesection within the first day or two, for the purpose, not of arresting fever at once, but of lowering inordinate vascular action, in persons of a robust habit, and where the fever sets in with violent headache, great heat of skin, and a firm bounding pulse. We do not, however, at present meet with many such cases, nor are we often called in at a period when venesection might be advantageously practised. The physician seldom sees a case of fever until the third or fourth day, and then it is too late to think of general depletion by the lancet. This explains why venesection is so seldom employed in typhus in our hospitals. Moreover, in entering on the treatment of any case of fever at present, you should bear in mind the nature of the prevailing epidemic, and be careful how you proceed with respect to bleeding; and if you take away blood, do not go so far as you would if treating a case of fever under different circumstances, and of a genuine inflammatory character. I know that many persons have asserted that you can bleed in all cases of fever, no matter what the state of debility may be; because this, they say, is only apparent, and depends upon congestion and oppression of vascular action. I do not know how far this doctrine may be applicable to other epidemics, but in the present fever it certainly does not hold good; and no man in his senses would think of adopting it as a guide for his practice. I have seen some of the most intense, dangerous, and protracted cases of fever, commence without any appreciable increase of vascular action, with a soft, slow pulse, a cool skin, no symptoms of congestion of any internal organ: in fact, without anything which would, even in the youngest and most robust habits, call for the use of the lancet. Increased vascular action, and this you should always bear in mind, is not in itself a proof of an inflammatory diathesis in fever, but rather one of a set of symptoms

produced by the same morbid cause. The heat of the skin and rapidity of pulse are, just like the debility, products of the same morbid cause, and not the results of inflammation, or increased action of the heart, depending on a general inflammatory condition of the whole mass of the blood. You should also recollect that in fever, as well as in other diseases in which the nervous system is greatly deranged, the pulse is not unfrequently a very deceptive guide. In many cases of fever, where the patient happens to be of an irritable habit, the pulse exhibits a degree of thrill and apparent hardness, which might lead an inexperienced or inobservant practitioner into serious errors. I do not mean to say that an inexperienced finger will not be able to distinguish a pulse of this kind from one of genuine hardness, but I know that many persons have been misled by it, and I warn you against the danger.

Again, never use the lancet when there is any, even the slightest, appearance of maculæ, no matter how intense the headache, heat of skin, or signs of general vascular action, may be. I have seen some cases in which the lancet was used during the presence of maculæ, and I have seen its employment followed by the most lamentable consequences. You should, therefore, never omit to examine the skin, for circumstances might occur which would authorise a moderate use of the lancet, provided there was no sign of maculæ present. Formerly, persons were very much in the habit of employing arteriotomy when the headache and delirium were violent, regardless of the period or stage of fever; and nothing was more common than to see a physician ordering the temporal artery to be opened on the eighth, ninth, or even tenth day. This was very much the practice during the time when the doctrine of typhus being the result of inflammation of the brain prevailed in this country and England, and a very unsuccessful practice it was. You perceive we seldom have recourse to arteriotomy here; it may be occasionally necessary, and when it is, we employ it; but as a general practice it does not appear entitled to any merit, nor can we give it our recommendation.

The examples which you have seen in hospital show you that local inflammation arises, generally speaking, at a period when general bleeding is no longer admissible. Here you must have recourse to cupping and leeching; and this leads me to say a few words on this part of the subject. I have observed that local inflammations in typhus are most usually seen after the stage of excitement has arrived at its acme, and that it is generally about the middle of fever that they begin to fix themselves in various internal organs. We have, it is true, very severe affections of the internal organs, particularly of the brain and digestive system, in the commencement of fever, but these are most frequently the results of mere irritation or excitement, and not of true inflammatory action. They are, however, of considerable importance, and frequently require the application of leeches. I have spoken already of the mode in which leeches are to be applied to the head, with

the view of relieving headache and cerebral congestion ; it is not necessary that I should say anything respecting their application to the epigastrium or abdomen, for the relief of gastro-intestinal symptoms, in the beginning of fever, as there is very little chance of your doing any mischief, even by the free use of leeches, at this period ; it only remains for me to make a few remarks on the use of leeches and cupping-glasses, in the more advanced stages of the disease. Well ; your patient, suppose about the ninth or tenth day, gets pain in his side, cough, and increased frequency of respiration, and, on examination, you find sufficient evidence of the existence of pneumonia. Or he complains of abdominal symptoms, and you have strong reasons to think that hepatitis or enteritis is present. Here you will have recourse to leeches or cupping, according to the circumstances of the case. An attack of pneumonia, coming on in fever, frequently acts as a stimulus to the economy ; the collapse of fever disappears more or less, and the pulse becomes more firm and resisting. This is a fortunate occurrence, for under such circumstances the patient is better able to bear depletion, and you may proceed at once to apply cupping-glasses or leeches to his chest, regulating the quantity of blood you abstract not only with reference to his present symptoms, but also to his future condition. But it sometimes happens that pneumonia occurs at a later period of the disease, and when you cannot use cupping-glasses, or even leeches, to any great extent. In such cases, (and the same remark will apply to enteritis, or any other inflammation occurring in the advanced stage of fever,) you should leech with great caution ; begin with four or six at a time, and when they drop off, cover the leech-bites with a cupping-glass. In this way you will know pretty nearly the exact quantity of blood which the patient has lost, and you can arrest it with less difficulty afterwards. You can then have recourse to calomel and opium, or tartar emetic, according to circumstances. Leech as far as you can, and then have recourse to immediate blistering, and such other means as the exigencies of the case may demand.

You may leech, then, freely, and without any particular caution, in the commencement of fever, whether it be for cerebral, or for thoracic, or abdominal symptoms ; but as the fever advances, you must exercise more discrimination and care, both as to the number of leeches you apply, and the time you allow them to bleed. In applying leeches to the head, I would advise you not to put them on both temples, or behind both ears at once, as this is awkward, and prevents the patient from lying on either side. You may also, in cases of cerebral irritation, apply them to the nostrils or septum narium ; in this way you will be able to get away a large quantity of blood by means of very few leeches, for one or two at a time will be sufficient. The application of leeches to the abdomen or thorax, so far as the place for their application is concerned, does not require any observations. You will frequently have to employ them in the treatment of gastro-intestinal inflammation, and you

will find them most valuable agents in many cases, when scarcely any other mode of depletion is admissible. In leeching the chest and abdomen in particular, I would advise you never to have recourse to fomentations with the view of getting more blood from the leech-bites. Fomentations are too often a source of fresh mischief in cases of this kind, leading to exposure of the patient to cold, and to the annoyance of having his linen and bedding kept wet for hours together. Always give directions to have cupping-glasses, or hot dry flannel cloths, applied as soon as the leeches drop off, and you will avoid the inconveniences attendant on fomentations, at the same time that you will be able to procure quite as much or even more blood, within the same space of time, and you will have less difficulty in arresting its flow afterwards, a point of some importance in cases where the loss of even a trifling quantity of blood is often of great moment, and likely to have a very powerful effect on the state of the patient.

I had purposed concluding to-day my observations on the principal remedial agents used in the treatment of fever, but find that time will not permit me to go further. At our next meeting, I shall say a few words on the employment of mercury, and some other remedies, and will then proceed to the consideration of some cases of importance which are now under treatment in our wards.

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## LECTURE X.

**Abdominal aneurism** — Effect of posture on the bruit de soufflet — Limitation of this sound to one spot in aneurism — Its extension in mere nervous affections — Letter from Dr. Corrigan on the subject — Case of diabetes — Discovery of casein in the urine — Different varieties of diabetes.

I SHALL draw your attention to-day to the consideration of some cases which occurred before the commencement of the present session — that is, during the months of August, September, and October — and which were attended with circumstances of peculiar interest.

The first of these cases was one of *aneurism of the abdominal aorta*, a disease which has been studied with much care and attention within the last few years. It is unnecessary for me to enter here into any detail of the symptoms and morbid phenomena which characterise this affection; you will find sufficiently ample accounts of them in various works of pathology; the chief symptoms you will find briefly but accurately given in Dr. Cowan's excellent "*Bedside Manual of Physical Diagnosis*." Ten or twelve years ago, the diagnosis of this disease was extremely obscure and imperfect, and an aneurism of the abdominal aorta was rarely detected in its incipient or even in its advanced stage, when it did not pre-

sent the phenomena of a large pulsating tumour, the existence and nature of which could be scarcely passed over even by the most superficial observer. In the commencement, when the aneurismal tumour was small, and did not manifest itself by any external pulsation, or even when it was of considerable size, but happened to be protected from an examination by its situation, connections, &c., it not unfrequently remained undiscovered during the patient's life-time, and was detected only on dissection. A very remarkable case of this description has been recorded by Dr. Beatty, in the 5th vol. of the Dublin Hospital Reports. The patient was a relative of my own, and I had frequent opportunities of studying his case. I did not see him in the commencement of his illness, but I afterwards accompanied him to London and Paris, where he had the advice of the most eminent professional men. He died about two years afterwards, and it was only on dissection that the nature of his disease was discovered. The case was subsequently published by Dr. Beatty, chiefly from the gentleman's own notes, and excited a great deal of attention in London and Paris, as well as here. I mention these facts to show you that it is only very recently that aneurism of the abdominal aorta has been studied properly. I feel perfectly convinced that an error in diagnosis of this description would not be committed at present, and that, with the light which we now possess, the disease would have been speedily recognised. You will find the case in the 5th vol. of the Dublin Hospital Reports, and it is well worthy of your attentive perusal.

I do not intend to enter into any general considerations on the subject of aneurism of the abdominal aorta; I shall confine myself at present to the examination of a single point of diagnosis, on which Dr. Corrigan has published some observations, in a recent number of the Dublin Medical Journal. With the view of illustrating this matter more fully, I shall read for you the notes of the following case.

Michael Whelan, a gardener, aged 40, was admitted into the Meath Hospital on the 19th of August, 1836. He had no remarkable illness, except an attack of venereal about nine months previously, for which he was salivated and cured. His health continued as good as usual, until about five months before admission, when he was attacked with pain in the stomach and bowels, and occasionally in the back and right hypochondrium. About six weeks before admission, this pain became constant, and was accompanied by epigastric tenderness, nausea, and vomiting. For these symptoms he was admitted into Sir P. Dun's Hospital, where he had leeches, sinapisms, and blisters, to the epigastrium and right hypochondrium, and internally, turpentine, with castor oil, but without any benefit whatever, and he left the hospital pretty much in the state he entered it, about four days before he was received at the Meath. His symptoms, on admission, were pain and tenderness on pressure over the epigastrium, pains shooting through the whole abdomen, no tumour or hardness discoverable, anorexia,

nausea, with occasional vomiting. Tongue clean, bowels free, no thirst. He complained of loss of sleep, his spirits were dejected, and there was more or less emaciation; pulse 102, full and regular; action of the heart normal. He stated that he generally obtained transient relief from the abdominal pains by taking a draught of warm water.

From the history of this case, and the consideration of the patient's symptoms, we are led to conclude that it was a case of dyspepsia. You perceive he had many of the symptoms which characterise derangement of the digestive system—as anorexia, nausea, with occasional vomiting, epigastric tenderness, pain, and emaciation; and in addition to these, there was no tumour or hardness present which would lead us to infer the existence of organic disease. We therefore had recourse to the usual remedies employed on such occasions. We ordered a large enema of warm water and oil, to be thrown up the rectum with the aid of Read's syringe. This treatment is generally employed on such occasions, whether the patient reports his bowels costive or not; for we have frequently observed, that after using enemata in this way, once or twice daily, for three or four days, many of the usual phenomena of indigestion, as pain, nausea, irregularity of bowels, and abdominal tenderness, are greatly relieved, or disappear altogether. We also applied leeches to the epigastrium, and prescribed hydrocyanic acid, to be taken in doses of two drops, three times a day. Under this treatment, assisted by a carefully regulated diet, the patient seemed to improve at first, and experienced some relief of many of his distressing sensations. His pulse fell to 84, and subsequently to 76, and the vomiting ceased; but the pain in the epigastric and umbilical regions continued to recur at intervals, sometimes depriving him of sleep, and at the same time when we expected a favourable result from our treatment, he would suddenly, and without any apparent cause, become as bad as ever. On the 24th, Mr. Harnet, a pupil in this hospital, noticed a feeble and indistinct pulsation in the epigastric region, and, on applying the stethoscope over this part, a distinct bruit de soufflet was heard, which diminished in intensity as the instrument was carried downwards, ceasing altogether at the umbilicus. Under these circumstances, I requested my friend Dr. Corrigan to examine the patient, which he subsequently did, and gave the diagnosis of aneurism of the abdominal aorta. He found the bruit very distinct when the patient was in the recumbent position, but it nearly ceased when he sat up or stood erect. By elevating the pelvis, and depressing the shoulders, a *fremissement* was felt once or twice when deep pressure was made in the immediate neighbourhood of the place where the bruit was heard.

The man continued to suffer in various ways during the time he remained in hospital. Sometimes he was quite free from pain, had a tolerable appetite, and improved in his looks and spirits. At other times, he had severe attacks of pain in the stomach, accompanied with nausea and severe pain in the spine, about the termination of

the dorsal vertebrae. When the pain in his stomach was severe, the pain in the back was generally relieved. These pains frequently affected him during the day, but the most usual, as well as the severest paroxysms, occurred at night. He suffered some inconvenience and sense of weight and fulness after eating, but this was by no means a prominent symptom. He also had occasional fits of emesis, and generally felt more or less relief after vomiting. Towards the latter period of his illness, the paroxysm of pain became more frequent and severe, and lasted for a longer period. On the 16th and 17th, he had acute pain in his back and stomach, accompanied with nausea. On the 18th, he was seized with violent pains while eating his dinner, and expired about half-past five in the afternoon.

His body was examined by Mr. Porter, eighteen hours after death. On opening the abdomen, an aneurism of the abdominal aorta, immediately below the cæliac plexus, was discovered. It was evidently a true aneurism, and originated in a dilatation of the coats of the vessel with rupture, for the lining membrane of the artery was continued into the aneurismal sac, from which, also, several branches were given off. The edge of the aperture, through which the blood escaped into the cavity of the abdomen, was very thin, and presented a fringed appearance. There was an immense quantity of coagulable blood effused, which adhered firmly to the sac, and also to the kidney. The aneurismal sac was about the size of a hen's egg, or a little larger. The external iliac arteries were diminished in size.

Some time after this case had been examined by Dr. Corrigan, he favoured me with the following communication :—

“ My dear Doctor,—I thank you for your kindness in having given me an opportunity of seeing the case of Whelan, who died in your hospital of aneurism of the abdominal aorta. You have expressed a wish that I should explain on what grounds I gave the diagnosis of aneurism, which chanced to turn out correct. On the symptoms I have nothing to observe; they simulated, as well as I can recollect, the ordinary symptoms of chronic gastro-enteritis.

“ The opinion which I gave was altogether founded on the physical signs, viz., the permanent existence of bruit de soufflet, the remarkable increase of the sound by change of position, and the limitation of the sound (when thus increased) to a particular spot.

“ The bruit de soufflet was heard a little below, and to the left side of the ensiform cartilage; it was indistinct when the patient stood up or sat erect, but when he was made to lie in a perfectly horizontal position, the sound became very loud, and with the increase of loudness it became the more evident that it was quiet circumscribed, and that it did not extend downwards along the aorta. This case made the third of abdominal aneurism which I have seen at so early a period of the disease, and in the Dublin Medical Journal for January, 1833, where I have related the two previous

cases, I have endeavoured to explain the principle on which I have used change of position as a means of rendering distinct a bruit de soufflet which might otherwise escape detection. While a patient with aneurism of the abdominal aorta sits or stands erect, the column of blood in the descending aorta is exerting a considerable hydrostatic pressure upon the sides of the aneurism, which, even in the intervals of the heart's contraction, is sufficient to keep the aneurism very tense. The sides of the aneurism thus kept tense cannot thrill or vibrate, and hence there is little or no bruit de soufflet; but when the patient is placed in a horizontal position, the aneurism is relieved of the hydrostatic pressure, and being no longer constantly acted upon by a force which would keep it very tense, its sides are more at liberty to vibrate, each new rush of blood gives to the now comparatively flaccid side of the aneurism a thrilling vibration, and the bruit de soufflet becomes proportionally loud. In the latter pages of the article on *Bruit de Soufflet*, which I have sent for insertion in the November number of the *Dublin Journal*, I have endeavoured to explain the rule which regulates the connection between aneurism and bruit de soufflet.

"There are cases of bruit de soufflet in the abdominal aorta, in which the sound arises from nervous irritation or other causes, and which sometimes simulate aneurism; but in all such cases which have come under my own observation, it could be perceived that the bruit de soufflet extended along a considerable portion of the aorta, and in most of the cases the vessel could be traced of its natural size. Laennec, you remember, has already made a similar observation. 'Le stéthoscope me donnait la sensation de la forme et des dimensions de l'artère, dont le calibre semblait tout à-fait-égal, et de grandeur naturelle,' &c.

"It remains, of course, for further observation to confirm or correct the principle on which change of position was used to assist in forming the diagnosis. Excuse me for trespassing on your patience with this long letter, and

"Believe me, my dear doctor,  
"Yours sincerely,  
"D. J. CORRIGAN."

You perceive, then, that Dr. Corrigan dwells on the circumstance of bruit de soufflet being heard louder in the horizontal position, not because he thinks it a diagnostic of aneurism of the abdominal aorta, but because a knowledge of this fact leads us to the discovery of bruit de soufflet in cases where otherwise it would be very likely to escape observation. Thus, according to his views, it will not be sufficient, in a case of suspected abdominal aneurism, to examine the patient standing, or in the erect position; you must place him in the horizontal position, in order to hear the bruit distinctly, and if you depress the shoulders, and elevate the pelvis, so as to diminish still farther the hydrostatic pressure, you will render the sound still more distinctly audible. When Dr. Corrigan first published

his views, I fell into the error of supposing that he intended to put this forward as a diagnostic mark between aneurism of the abdominal aorta and diseases which simulate it. This, however, is not the case; Dr. Corrigan's meaning is, that the change of position will enable you to discover a bruit de soufflet, which, under other circumstances, could not be detected. He afterwards proceeds, as you may have observed, to distinguish the bruit de soufflet of aneurism from that which accompanies other affections, and his chief diagnostic is the limitation of the bruit de soufflet to a particular spot of the track of the artery. In cases of nervous irritation, accompanied with bruit de soufflet, you hear the bellows murmur all along the course of the vessel; but in the bruit de soufflet of aneurism, the murmur is confined to a certain spot, and becomes more indistinct the farther you remove the end of the stethoscope from the place where it is situated. I would refer you, for farther information on this point, to Dr. Corrigan's paper on bruit de soufflet, in the Dublin Journal for November, 1836, where you will find enumerated all the causes which Dr. Corrigan looks upon as capable of giving rise to this peculiar variety of sound.

Shortly after Whelan's death, another case offered itself to our notice, which promised to throw some further light on the subject of aneurism of the abdominal aorta. A woman named Sarah Smith, aged 48, was admitted into the Meath Hospital on the 23d of September, 1836. She stated that she had been ill for three months, and complained of headache, pain and weakness of the loins, loss of strength, and palpitations of the heart. Her appetite was impaired, her stomach irritable, and for a considerable length of time she had been subject to attacks of vomiting, in which she threw up large quantities of sour fluid. Her bowels were habitually costive, and consequently required the stimulus of purgatives. She had frequent rigors, followed by heat of skin and perspirations, which sometimes attacked her two or three times a day. The pain in the head was chiefly confined to the occipital and mastoid regions; she had some tenderness on pressure in this situation, but no appearance of swelling. She complained of slight cough, aggravating the headache, but on examining the chest no morbid sound could be discovered, and the action of the heart appeared healthy and normal. The abdomen was soft and natural, but on applying the stethoscope over the epigastric region, a loud distinct bruit de soufflet was heard when the patient lay in the horizontal position; this sound became altogether indistinct when she stood or sat erect. Owing to the emaciated state of the patient, and the thinness of the abdominal parietes, the aorta could be felt quite plainly throughout nearly its entire course. It appeared to run rather tortuously, but no evidence of any kind of dilatation could be discovered. The patient had no pain in the epigastric region, but had constantly suffered from a sense of tightness in this situation. She complained, however, of constant pain in the spine, about the upper part of the lumbar region. The catamenia had

ceased, and she was subject to a leucorrhœal affection of some years' standing. Her tongue was clean, her appetite bad, bowels confined, no remarkable thirst or nausea; pulse 76, weak, but regular.

Her bowels were kept open with rhubarb and magnesia, and subsequently with pil. aloes cum asafoetida, and her diet properly regulated. Under this treatment she improved rapidly, and left the hospital greatly relieved on the 5th of October. In this case, the bruit de soufflet was nearly, or altogether, permanent; for it could be heard still at the period when the woman left the hospital.

It extended along the track of the vessel, and depended, most probably, not on aneurism, but on nervous irritability, combined with dyspepsia. The woman was greatly emaciated, and we could feel the artery distinctly for nearly its entire course, but could not detect anything like an aneurismal tumour. I may observe, also, that in this case a phenomena was observed, which was also noticed in the case of Whelan. Mr. Dillon observed that when the woman lay on her face, the bruit de soufflet could be heard on the left side of the spinal column, but not on the right.

From a consideration of this case, you will perceive that *change of position, as employed by Dr. Corrigan, is applicable not only to cases of bruit de soufflet connected with actual disease of the aorta, but also to cases in which the bellows murmur depends on nervous irritation.* When this woman stood or sat up, no morbid sound could be heard; but when she lay in the horizontal position, a loud and distinct bruit de soufflet was heard along the track of the artery. The same observation will apply to hysterical bruit de soufflet, which is increased in the horizontal, and diminished in the erect position; and the very same arguments which Dr. Corrigan has used to explain this sign in aneurism of the abdominal aorta, will apply to other cases in which there is bruit de soufflet without aneurism.

Having made these observations, I shall proceed to direct your attention to a very remarkable case of *diabetes*, now under treatment in the chronic ward. When the patient was admitted, he complained merely of emaciation, weakness, and thirst; and as we could not find anything to account for the last symptom, I requested the gentleman who had charge of the case to attend carefully to the state of the urinary secretion, as I suspected it was a case of diabetes, which afterwards turned out to be the fact. On examining the urine, shortly after his admission, no urea could be found in it; within the last two days, it has been analysed with great care by Dr. Aldridge, and he informs me that at present it contains a considerable quantity of urea. You perceive, then, that the result of our treatment has been favourable; the urea, which had disappeared while the disease had existed in a more intense state, is now beginning to return. Dr. Aldridge has not been able to discover any sugar in this man's urine, but he has found it in a peculiar animal matter, the existence of which, in the urinary

secretion, is worthy of attentive consideration, and presents some points of great physiological interest. I may observe, that some time before Dr. Aldridge made his analysis, it was reported to me that the man's urine was albuminous — a fact which did not at all surprise me, as the presence of albumen has been frequently observed in the urine of dropsical and diabetic patients, and it has been observed that in some cases of diabetes mellitus, the sugar became replaced by albumen in proportion as the disease declined, and that this process went on for some time after the diabetic symptoms continued to diminish in intensity. But in the present instance, Dr. Aldridge has discovered that the animal matter contained in our patient's urine is not albumen, but casein. It may be necessary, for the benefit of the younger students, to state that *casein* is not precisely analogous to cheese ; it is, however, the principle from which cheese is formed, after it has undergone certain chemical alterations, the most important of which appears to be fermentation. Casein, as you will find in your works on chemistry, is in its chemical composition closely allied to albumen ; indeed, the chemical relation is so very strong, that you might be inclined to say that the difference between them was altogether unimportant, since analysis has failed in detecting any remarkable difference in the ultimate elements of which both are composed. They certainly differ very little in their ultimate principles, but then they differ so much in their properties, that it is to the latter alone we must look in order to draw between them a sufficiently well-marked line of distinction. If we examine casein in reference to its physical properties, we shall find it very different from albumen. Ferment albumen as long as you like, you will not be able to produce anything like cheese ; and if the fermented substance be allowed to mould and putrefy, it will not produce mites. Again, casein is not like albumen, separated from water and precipitated by boiling, as is well known from the familiar example of submitting milk to the boiling process. It is in these, and properties of a similar nature, that we discover the difference between casein and albumen.

Now if this discovery of Dr. Aldridge's be confirmed by further investigation and experiment, it will form a very remarkable incident in the history of diabetic urine. It is also interesting, in a physiological point of view, to find the animal principle of cheese in the urine of the human male. The only human secretion in which it is met with in any considerable quantity, is the milk of the female, and also occasionally in the urine of pregnant women — a fact noticed by Dr. Cummin, in his able lectures on Forensic Medicine, now in course of publication in the London Medical Gazette ; casein has been also found, in some instances, in the male as an abnormal secretion from the mammae. You are aware that Humboldt has given some instances of this secretion occurring in the male, and with the facts which we have before us, there does not appear much difficulty in admitting the statements of Humboldt,

when he says, that he has seen an infant nourished for the space of twelve months with milk secreted by the male breasts. Here, you perceive, we have casein secreted in abundance by the kidneys, and you are all aware that sugar is secreted by the same organs in very remarkable quantities. You perceive, then, we want nothing but the oil to make up a secretion from the kidneys analogous to that formed in the breasts of the female. Now, when we recollect the abundance in which oily particles are present in the blood of some dropsical patients, the separation of oil from the blood may be easily conceived to be within the power of the kidneys, and, consequently, it is just within the range of possibility that some of the strange tales told about persons passing a milky urine may be founded on fact.

These facts are extremely curious as connected with the history of secretion. I think Dr. Aldridge's discovery is likely to throw some additional light on the nature of diabetic urine, and I am happy to find that a new path of investigation has been struck out by a gentleman who has been for a long time a diligent and talented pupil in this hospital.

Before I close this lecture, I shall run briefly over the principal varieties of diabetes. In the first place, then, we have the diabetes insipidus, in which there is merely an increase in the quantity of the urine, without any secretion of sugar, &c. We had some time ago a very remarkable example of this form of the disease in one of the porters of Stephen's Green. This man passed generally from twelve to fourteen pints of urine in the day. He was treated with Dover's powder and vapour baths, and is at present in the enjoyment of good health, although the disease had continued for many months. He still requires, however, the exercise of much caution, for any imprudent exposure to cold, or irregularity of diet, renders him liable to relapse. The next form is that termed diabetes mellitus, and is remarkable for the quantity of sugar contained in the urine. Then we have the diabetes ureosus, characterised by the existence of a large quantity of urea in the renal secretion, and by the greater specific gravity of the urine. Next we have the diabetes albuminosus, in which albumen is found to exist in the urine; and lastly, (should Dr. Aldridge's observation turn out to be correct,) we shall have to add another species, or the diabetes caseosus. It remains, however, for further investigations to decide what peculiar modifications of treatment are to be made in those various forms of diabetes. At present, we are not quite *au fait* as to the treatment adapted to each particular species of diabetes, and much remains to be discovered in a field presenting extensive room for speculation and inquiry.

## LECTURE XI.

Fever — Application of cold to the head; particular apparatus for this — Warm applications recommended — Use of mercury in fever — Effects of intemperance — Illustrations afforded by particular cases — Necessity of active attention to cerebral symptoms — Occasional absence of morbid appearance after death — Contraction and dilatation of the pupils — Coup de soleil.

LET US now return to the subject of fever.

I have already laid before you my views as to the use of general and local bleeding in fever, and pointed out the circumstances under which they might be employed. In treating of general bleeding, I stated that we used it at the commencement of fever, with a view of checking the disease altogether, or of rendering it milder and less dangerous, by moderating excessive inflammatory action, and controlling cerebral excitement. I have also spoken of the use of leeches and blisters, and it only remains for me to say a few words respecting the application of cold to the head as a means of moderating or removing symptoms of cerebral excitement. In Dr. Southwood Smith's Treatise on Fever, you will find many cases and arguments to show that where headache and delirium are present, and where the lancet is inadmissible, if you place the patient in a warm bath, and direct a forcible small stream of very cold water on his head, he soon becomes more calm, experiences great relief of his headache, and is frequently brought back to his bed quite free from cerebral symptoms. The burning heat of the skin is quickly replaced by a sensation of coolness, or even cold, the flushing of the face disappears, the delirium vanishes, and a favourable crisis is often produced. Indeed, the effects of this remedy are extremely remarkable, and I have no doubt that many of the cases in which I have employed tartar emetic with such signal advantage would derive equal benefit from this mode of treatment. The cold affusion, as recommended by Dr. Smith, and practised at the Charité Krankenhaus, at Berlin, is most certainly an excellent and energetic remedy, and I regret that we have not apparatus in this hospital for applying it; but I fear its utility must be, at least for some time, limited to public institutions, and that it cannot be employed to any extent in private practice. There is a good deal of prejudice against applications of the kind in this country. At the time that cold affusions were used in the treatment of scarlatina, much mischief was done by their indiscriminate employment, and this added to the general feeling of dislike towards them. At all events, cold affusion is a remedy which requires an apparatus seldom at the command of the physician in private families, and, indeed, I think that in most cases we may do very well without it.

You are all aware, that in cases of determination to the head, the common practice is to shave the scalp, and apply cold lotions. In my published lectures, I have endeavoured to point out the im-

perfect, and even hurtful, mode in which this remedy is ordinarily applied, and to show that it is calculated rather to increase than to diminish the heat of the integuments. Cold lotions act as a powerful refrigerant, if constantly repeated, so as to keep the part below the standard temperature of the body. But this is seldom or never done. The nurse applies the lotion, and then, perhaps, drops asleep, or occupies herself with some other business, until at last she is attracted by the vapour arising from the patient's head, and then she renews the application. I need not say that in this way all the good effects of cold as a refrigerant are entirely lost, and that a degree of reaction is produced which must altogether mar and nullify its application. I have, therefore, given up, except in very few cases, the practice of applying cold lotions, and give a preference to the use of warm fomentations of equal parts of vinegar and hot water, applied to the temples and shaven scalp, and frequently repeated. I am quite sure we employ warm applications for the relief of headache and cerebral symptoms much less frequently than we ought. You are aware that surgeons are in the habit of treating some local inflammations with warm, and others with cold applications, and that the rules laid down for distinguishing the cases in which cold, and those in which warm fomentations should be used, are deficient in precision, and that most commonly the practitioner has to refer to his own individual experience for the guidance and determination of his choice. So it is, also, with respect to the use of fomentations to relieve the pain and congestion of internal parts. Among these, I include determination to the head in fever, accompanied by intense headache, restlessness, and delirium. In some cases of this description, cold applications will give ease; in others, most relief is obtained by fomenting the head with water as hot as it can be borne.

The idea of employing hot fomentations in cases of this description was first communicated to me in 1833, by Mr. Swift, who became accidentally aware of their value while washing his face one day in very warm water, at a moment when labouring under severe headache. The sudden relief obtained by the application of hot water, induced him to try it extensively in the headache of influenza, and with the most satisfactory results. You are aware, that in the influenza which appeared in this country in 1833 one of the most remarkable symptoms was intense headache. This was accompanied with great debility, and was not amenable to the ordinary modes of depletion. Now, Mr. Swift found that by applying water, as hot as it could be borne, to the forehead, temples, and back of the head, great and almost instantaneous relief was obtained, and that in this way he was able to keep a most unpleasant symptom in check, while he was taking measures to remove the disease. I afterwards heard from my friend, Dr. Oppenheim, of Hamburg, that he had also discovered that this was the best means of affording relief under the same circumstances. This led me to think of applying hot fomentations to the head in other diseases, and

although I cannot give you any particular rules for determining the cases in which you should employ them, I can say that you will generally find warm vinegar and water the best and most efficacious application in the ordinary headache of fever.

I shall close this lecture with a few observations on the use of mercury in fever, and this will include all I have to say at present on the remedies most generally employed in the treatment of typhus. Are we to have recourse to mercury, or not, in typhus? I do not allude here to its use as an aperient, but when called to treat a case of fever, are you to proceed at once to bring the patient's system under the influence of mercury? Are you, in addition to the other measures usually adopted in the treatment of fever, to go on with the administration of mercury until you affect the mouth, and bring on salivation? This was the practice in my time, and great confidence was placed in it by the majority of practitioners. It has been also very extensively recommended by army and navy surgeons, in the treatment of tropical fevers, which all partake, more or less, of the typhoid character. I must confess that I am not at all inclined to adopt this practice, and that I have seen abundant reasons why I should neither employ nor recommend it. In the first place, we have observed in our wards that patients with other diseases have frequently caught fever from exposure to infection, at a time when they were fully under the influence of mercury. In the next place we have observed that persons who were thus attacked with fever while in a state of salivation did not escape better than others, and that in them the disease ran its full course, aggravated rather than diminished in its danger by the pre-existing mercurialisation. These facts I have frequently seen verified in hospital and private practice. You perceive, then, that mercurialisation neither protects a man from the contagion of typhus, nor does it produce a favourable modification in its type or progress.\* Again, I have repeatedly witnessed the daily and continued exhibition of mercury in fever, and I cannot recollect a single case in which it appeared to check the disease, moderate its symptoms, or bring about a favourable crisis. I am aware, that in entering my protest against this practice, I dissent from a very considerable body of my brethren, who from the beginning to the end of fever, never cease in their attempts to bring the patient's system under the influence of mercury. I am convinced that, in the cases in which recovery is stated to have followed this practice, the *post hoc* has been mistaken for the *propter hoc*. Besides, fever is one of those affections in which you find it extremely difficult, and often impossible, to bring the system fully under the influence of mercury. There are certain states of the system which prevent altogether the full operation of mercury, and bad typhus is one of these states. Where fever has laid deep hold of the constitution, you cannot

\* [We again express our assent to the author's remark: it is confirmed by our own observation. In this instance we again repeat, that the fever in question must not be confounded with miasmatic fevers. — *Ed.*]

affect it with mercury. Besides, when a patient recovers who has been mercurialised during the course of fever, he does not recover because his system came under the influence of mercury, but he comes under the influence of mercury because he recovers from the fever. Add to this, that mercury is a remedy which requires a peculiar regimen, and that it is very apt to engross the practitioner's attention, and prevent him from the exhibition of remedies which are more directly indicated, and in reality more useful. These considerations, and others, have convinced me that the exhibition of mercury in fever, with the view of touching the gums, is injudicious and unnecessary. There are, however, cases in which you will be compelled to have recourse to mercury, whatever the stage or type of the fever may be. Whenever inflammation of some internal organ — as, for instance, of the lungs — arises during the progress of fever, you must employ mercury at once; and cases of pneumonia, which would have proved fatal, have, on numberless occasions, been treated successfully by mercurialisation. But under ordinary circumstances, and were there no indication similar to that which I have just pointed out, I do not see any advantage to be derived from the use of mercury. I am not, therefore, in the habit of employing mercury in fever. Sometimes I use calomel as an aperient, and I frequently prescribe small doses of hydrargyrum cum cretâ, with the view of gently stimulating the liver, and preventing the tendency to congestion of the intestinal canal; but farther than this I am not in the habit of going; and I never, except in cases of pneumonia, or inflammation of some internal organ, attempt to bring the patient's system under the influence of mercury during the course of typhus.

Permit me next to direct your attention to the case of the patient Murphy, who died last week. This case excited a good deal of our attention at the time, and I wish to make some further observations on it while it remains fresh in your minds.

It was one of those mixed cases of typhus in which, as the fever advances, we observe the usual phenomena of determination to the head, accompanied by a train of symptoms which bear a close analogy to those of delirium tremens. Among the pauper population which we have to treat, you will frequently meet with cases of this description. We witnessed many examples of it here, but not so many as are to be seen in other hospitals. It is a melancholy but well-known fact, that a great proportion of the diseases which come under our notice, in the acute as well as in the chronic form, are more or less complicated with intemperance. This you should never forget. In persons of the lower class, who are addicted to the daily use of spirituous liquors, you will find disease assuming a thousand unfavourable shapes and complications. You will find their fevers intermixed with various symptoms of an anomalous or dangerous character, and their chronic affections embarrassed by organic and visceral disease. You will be repeatedly struck with the strange and protean character which disease

assumes under the influence of an habitual intemperance ; and you will often, in the course of your practice, have to endure the annoyance and disappointment of seeing your patient carried off by some new and unexpected malady, after you have succeeded, by infinite toil, ingenuity, and patience, in removing every trace of his primary affection.

The case of Murphy was one of those which have been neglected in the beginning, where the vantage ground has been lost, and the chances of success are diminished almost to nothing. You have observed that all the fatal cases of fever which we have had in hospital were cases admitted at an advanced period of fever, and in which the head had been neglected. You have also observed how exceedingly difficult it must be to treat cases of this description. The patient is admitted at an advanced stage of fever, and at a period when he can give no account of his present or past symptoms, or the mode of treatment to which he has been submitted. He comes in with delirium, or coma, and subsultus tendinum ; his symptoms are certainly cerebral, and he exhibits, perhaps, a blistered scalp ; but we can have no means of ascertaining whether he has had headache, heat of scalp, throbbing of the carotid and temporal arteries, or vertigo — we cannot, in fact, decide with precision as to the exact state of the brain, and our practice must be embarrassed by more or less doubt and obscurity. I have already impressed upon your attention the urgent necessity of watching the head in fever, and I think I cannot too often reiterate the advice which I have given you, to endeavour to check cerebral symptoms before they amount to any degree of absolute danger. The fate of those who have died here, will convince you that when cerebral disease has once arrived at its *acme*, the most energetic measures will often fail in arresting it. It is a matter of vital importance, then, to prevent this lamentable state of things, and, without waiting until the symptoms of cerebral disease manifest themselves, to anticipate it in its very origin, and thus be enabled to control with certainty symptoms which assume such a fearful aspect in cases where cerebral disease has been allowed to go on unregarded. This is the practical lesson which I wish you to draw from the four fatal cases which have occurred in this hospital within the last month.

There are some points in the case of Murphy to which I wish to recall your attention, as I am anxious that you should make them the subject of reflection. For some days before his death, he had been delirious and unmanageable, with total loss of sleep, and a contracted state of the pupil. The antiphlogistic and derivative treatment had been employed without effect ; and seeing that his symptoms were advancing, and his sleeplessness undiminished, I ventured to give him an injection, consisting of two grains of tartar emetic with ten drops of laudanum.\* I am cautious in the adminis-

\* [An opiate enema in cases of fever with stupor and congestion of the head should never exceed ten drops. — *Ed.*]

tration of opium in the advanced stage of fever, where there is evidence of determination to the head; and it was on this account that I ordered it to be combined with tartar emetic, giving also directions that the effect of each dose should be carefully watched. He got three enemata during the course of the night—that is, thirty drops of laudanum altogether. He dozed after the last injection, and appeared more tranquil; but at our morning visit we found him in a state of coma, with rapid sinking of the powers of life, and death took place in the course of a few hours afterwards. I must confess the issue of the case gave me some degree of uneasiness at the time, as I thought it might have been precipitated by the administration of the opium. I could not say but that even this small quantity of opium might have greatly aggravated the cerebral symptoms, and accelerated the fatal event. Dissection, however, revealed the true cause of death. On opening the brain, we found extensive arachnoid inflammation, some effusion on the surface of the brain, and an intensely congested state of its vessels. The patient, altogether dissipated in his habits, and greatly reduced by fever, had been a young man of rather robust constitution previous to his illness; he had been neglected in the beginning of his fever, which, from the phenomena observed after death must have been characterised by early and decided determination to the brain, producing delirium, watchfulness, coma, and a contracted state of the pupil, which all our antiphlogistic measures were inadequate to remove or control. We did everything in our power: we leeched, blistered, and gave tartar emetic, but without effect: the case had not come under our care until symptoms of unmanageable cerebral disease had been established. This state of delirium, followed by contraction of the pupil and coma, and terminating in death, occurs in two classes of cases: first, in hospital patients of the lower class, who have been neglected in the commencement of fever; and secondly, in persons in the better classes of life, in whom the mind is frequently subjected to over-exertion, and who, when attacked by fever, exhibit a strong tendency to the early development of cerebral symptoms of a bad and unmanageable character. One of the worst symptoms observed in such cases is extreme contraction of the pupil. I have seen the pupil in some cases contracted to the size of a pin-hole; and I think I can state, that out of all the cases of this description which I have witnessed, there were but two recoveries. I have seen persons who had exceedingly bad and alarming symptoms of cerebral derangement recover, although accompanied by great dilatation of the pupil; but I think I have seen but two cases recover in which the pupil was contracted to the small size observed in Murphy's case.

With these facts fresh in your minds, allow me to direct your attention to the case of another man, who died lately in the fever ward with cerebral symptoms of an intense character. Now, in this man the very same train of phenomena were present which we observed in Murphy's case. He had, you recollect, typhus of a

low character, accompanied by delirium, subsultus, and the ordinary symptoms of determination to the head. I could defy any man who would compare these two cases together to point out any remarkable difference between them. The delirium, nervous excitement, and watchfulness, commenced the same way in both, and ran through the same course; both had contraction of the pupil, constant muttering and delirium, persistent watchfulness, and subsultus tendinum; and in both the cerebral symptoms terminated in coma and death. I would defy the most accurate symptomatologist to point out any marked distinction between them. Yet how different were the phenomena observed on dissection! In the one there was extensive lesion of the membranes of the brain, effusion on its surface, and intense congestion of its vessels; in the other, there was no appreciable departure from the normal condition. These are very strange things, and well worthy of attentive consideration. But it is not in typhus alone that we meet with the occurrence of analogous symptoms—in cases which exhibit a very different state of the brain after death. We are encountered with the same puzzling contrarieties in many cases of scarlatina. Cases come under our notice in which the patients appear to die entirely from the violence of the cerebral symptoms, and yet, on examination, we find very dissimilar states of the brain. In some, there is palpable and fatal lesion—in others, there are some dubious marks of congestion, quite insufficient to account for the symptoms; or the brain is found to be perfectly sound and normal.

It would appear that in scarlatina and fever, the poison of the disease exercises a deleterious influence on the brain, independent of inflammation, but capable of producing an analogous train of symptoms. Hence it is in many instances extremely difficult to distinguish the cerebral symptoms produced by the mephitic influence of fever on the brain, from those which depend on true inflammation. The one gives rise to delirium and fatal coma as well as the other; and in the advanced stage of fever, when the manifestations of nervous energy are feeble and imperfect, and when the circulating and respiratory organs act with diminished power, the distinction between mere irritation and actual inflammation becomes a matter of great difficulty.

In alluding, on a former occasion, to the occurrence of analogous symptoms under opposite conditions of the brain, I noticed that headache, tinnitus aurium, and giddiness, have been observed in cases where there was distinct evidence of determination to the head, as well as where there was every reason to believe that the supply of blood to the brain was greatly diminished. You will find a very curious illustration of this fact in the last number of Guy's Hospital Reports, which contains a very interesting paper from Sir Astley Cooper, on the effects produced by tying the carotid and vertebral arteries. Among other results, it appears that when the supply of arterial blood destined for the brain is diminished, the animal experimented on becomes stupid, is to a certain

extent incapable of voluntary motion, and exhibits a very remarkable dilatation of the pupils. This is an extremely curious fact. You are all aware that dilatation of the pupils has been long regarded as one of the most characteristic signs of extravasation and increased pressure on the brain; and yet it appears the very same condition of the pupil is observed when you cut off the supply of arterial blood to the brain. We are, I fear, as yet very much in the dark as to the changes which occur in the brain under opposite states of its vessels; and I think we have equally imperfect and confused notions of the changes which occur in that organ as the result of fever. We perceive these changes frequently accompanied by a train of symptoms, which, if not identical, have so close a resemblance, that it is often a difficult matter to distinguish between them.

Dilatation of the pupils is usually regarded as a sign of increased pressure on the brain; and when hydrocephalic symptoms are present, it is generally looked upon as pathognomonic of effusion. Yet from the experiment just alluded to, we find that dilatation of the pupil is also the result of a state of things in which we cannot suppose the existence of anything like increased pressure on the brain. When I speak of increased or diminished pressure on the brain, I am not prepared to maintain that such is actually the case, or that when a man becomes giddy and faints, after bleeding, the actual quantity of blood circulating in the brain is diminished, and consequently the amount of pressure; but when a man gets headache, vertigo, or syncope, from loss of blood, it must depend upon causes different from those which are connected with congestion of the brain, or extravasation on its surface, or into its substance. What I wish to impress upon your minds is, that dilatation of the pupils may be connected with very opposite states of the cerebral circulation; and that in fever it cannot be regarded as a sign of any value in determining the existence of congestion or inflammation of the brain.

It may not be amiss to mention briefly on the present occasion the details of a very remarkable communication, by Surgeon Russel, of the 73d regiment, formerly a pupil in this hospital. This communication was read by Dr. Wilson, at one of the *soirées* of the College of Physicians in London, and afterwards published in the *Medical Gazette*. Mr. Russel observes —

"I was led, by the following circumstance, to reflect on the nature of 'coup de soleil,' which, as well as I can recollect, is treated of by all authors, and is generally considered to be nothing more or less than true apoplexy, produced by the direct influence of the sun's rays; that its pathology is the same, and its mode of treatment similar — that is, that all the efforts of the medical attendant should be directed to the head, as the chief, nay, almost the only, seat of the disease: and here it strikes me a fallacy exists, leading to erroneous principles of practice. In May, 1834, while I was in medical charge of the 68th regiment (a fine corps, com-

posed of men in robust health,) then recently arrived at Madras, the funeral of a general officer took place ; to which, unfortunately, the men were marched out at an early hour in the afternoon, buttoned up in red coats and military stocks, — at a season, too, when the hot land winds had just set in, rendering the atmosphere dry and suffocating even under shelter of a roof, and when the sun's rays were excessively powerful. The consequence was, that after proceeding two or three miles, several men fell down senseless. As many as eight or nine were brought into hospital that evening, and many more on the following day ; three died — one on the spot, and two within a few hours. The symptoms observed (and they were alike in these three cases) were, first, excessive thirst, and a sense of faintness ; then difficulty of breathing, stertor, coma, lividity of the face, and in one, whom I examined, contraction of the pupil. The remainder of the cases, in which the attack was slighter, and the powers of re-action perhaps greater, or at all events sufficiently great, rallied ; and the attack in them ran on into either an ephemeral or more continued form of fever. The symptoms of these three cases did not more closely resemble each other than did the post mortem appearances. The brain was, in all, healthy ; no congestion or accumulation of blood was observable ; a very small quantity of serum was effused under the base of one, *but in all three the lungs were congested even to blackness through their entire extent* ; and so densely loaded were they, that complete obstruction must have taken place.\* There was also an accumulation of blood in the right side of the heart, and the great vessels approaching it."

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## LECTURE XII.

On constitutional inflammation in general — On fugitive swellings and pains — Curious case of erratic gout causing transient swellings — Gout affecting the lobe of the ear — Fatty hypertrophy of the ears — Gouty grinding of the teeth — Gouty neuralgia of the skin — Remarks connected with Dr. Kingston's recent researches on consumption.

I TAKE the present occasion of making a few remarks on certain varieties of the gout, of which I have seen several singular examples, premising some observations on constitutional inflammation in general.

There is no proposition in pathology better established than that

\* [We have examined a number of cases in which death followed a coup de soleil. The brain was but little congested in most of them ; probably not more than it would have been in the bodies of other individuals, dying suddenly. The lungs and heart were loaded with black blood. This condition, we are disposed to believe, was secondary to the state of the brain and *spinal marrow*, which were not inflamed or much congested, but highly deranged in their functions. The precise nature of that derangement is not known to us. — Ed.]

there exist certain constitutional affections capable of generating and modifying local inflammatory action; and that local inflammations, depending on a constitutional cause, are subject to very different laws from those which regulate the phenomena of common inflammation.

Another fact of equal importance in many points of view is, that local inflammations depending on a constitutional cause differ remarkably from each other, and in general present specific characters easily recognised. Thus, local affections arising from scrofula are not likely to be confounded with those depending on gout or rheumatism, and the inflammations produced by syphilis and other animal poisons exhibit peculiarities by which their respective origin and nature may be satisfactorily ascertained. It must however be admitted, that although advanced considerably in our knowledge of the phenomena of local disease depending on a constitutional cause, the subject still displays a wide field for investigation, and many points of much importance in pathology and practice require still further investigation. Professor Cayal, in his *Leçons Orales*, has made some observations on this subject well worthy of attention. Speaking of the dependence of local disease on constitutional cause, he says, "Il faut nécessairement conclure que les dégénéérations organiques ne sont pas *cause*, mais effet. Et dès lors, nous sommes fondés à vous dire, qu'au lieu d'user votre vie à chercher toujours quelles sont les dégénéérations organiques et les altérations de texture qui *produisent* les symptômes des maladies, il serait bien temps de s'inquiéter un peu de savoir ce qui *produit* ces dégénéérations ellesmêmes, en étudiant serieusement les caractères, la marche, et la tendance des actes vitaux qui les préparent, et qui les *produisent* réellement."

There is one fact connected with local inflammation depending on a constitutional cause not sufficiently noticed, namely, that certain affections of this kind are sometimes remarkably fugitive and transient. We are accustomed to regard the process of inflammation, whether common or specific, as one which generally lasts for some days; but it occasionally happens, that a peculiar diathesis will give rise to local affections having the characters of inflammation, and which run their course and terminate in the space of a few hours. This observation, which should be borne in mind in the investigation of diseases connected with the general habit, will serve to explain some of the anomalies which strike us occasionally in the study of constitutional maladies. The first instance of this kind that came under my notice occurred in the case of a florid healthy looking boy, aged six years, in whom, on attentive examination, I was led to suspect the existence of a scrofulous taint. At the time I saw him he was subject to a sudden and rapid formation of bumps, or tumours, on various parts of his body; sometimes on the arms, sometimes on the legs, and occasionally on the trunk. These circumscribed tumefactions were accompanied by a feeling of heat and tenderness, and apparently depended on local conges-

tion, or effusion in the subcutaneous cellular tissue. But what was most remarkable in them was, they arose, ran through their course, and terminated in the space of four or five hours ; they were suddenly developed, and disappeared with equal rapidity. In the course of a month, other more permanent inflammations were set up ; scrofulous ophthalmia, glandular swellings, and ulcers, supervened ; the joints became affected, and the boy died in about a year and a half, with all the characteristic marks of the scrofulous dia-thesis. I have detailed this case before, and shall not dwell on it any further at present ; but it is well worthy of notice in consequence of the very brief duration of the first local affections.

Gout is another disease which occasionally exhibits examples of its peculiar inflammation attacking various parts and tissues of the body, and that for an extremely short period of time. It is well known that persons of a gouty habit are subject to sudden pains or twitches, which last only for a few minutes, or even seconds. I shall not stop here to consider what may be the nature of these fugitive pains ; I may observe, that certain facts seem to prove that these pains are the result of a momentary congestion. Thus, in various neuralgic affections, and in inflammatory diseases in which the nerves are considerably engaged, pain is suddenly produced by coughing. If a man labours under neuralgia of the frontal or facial nerves, or if he be affected with sciatica, how are his sufferings increased, when he has unfortunately at the same time a cough ! Every time he coughs, the affected nerve gives notice that it feels the congestion by a sudden pain. Now, the only way in which coughing can increase a local pain, is by favouring local congestion ; that it is capable of doing this is proved by the redness of the face it occasions, as also by the hemorrhage from the nose, or from recent wounds, which is so often produced by a fit of coughing.

As there can be no doubt, then, that a momentary congestion may produce a momentary pain, we may infer that in many instances gouty twitches are owing to some cause which determines an instantaneous congestion of the affected part. Sometimes the congestion is more lasting, and then the pain is proportionally intense and persistent. Thus Mr. Daly, of Henry street, knows a gentleman, the lobe of whose ear is sometimes attacked suddenly by gouty congestion, accompanied by agonising pain, but which never lasts more than a few hours.

This fact brings to my mind a curious case which some years ago came under the notice of the surgeon-general, Mr. Ferrall, and myself. A young gentleman of fortune perceived that the pendant lobes or tips of his ears were becoming elongated ; they increased gradually in such a manner that he considered himself disfigured by their unseemly length, and therefore attempted their concealment by allowing his hair to grow in long curls, so as to hide his ears. This gentleman soon afterwards became dropsical and died ; and, on dissection, Mr. Ferrall found his liver in a state

of fatty degeneration. On slitting up the elongated portion of the ears, he discovered that their hypertrophy had been occasioned by the deposition of a large quantity of fat. The subcutaneous adipose tissue, and the omentum, were likewise much loaded with fat. This observation is of some importance, as teaching us that fatty degeneration may be the consequence of a general tendency in the system to manufacture and deposit fat in the textures of the different organs. In this point of view the change of structure in the liver must be regarded as an effect, and not as a cause, of the general derangement of the system, and the fatal termination of the case.

One of the most remarkable instances of fugitive inflammation affecting various parts of the body, which has come under my notice, occurred in the person of a gentleman lately under my care. I shall not go through the whole history of his disease, of which he has favoured me with a very minute account, but shall merely state, that he is of a gouty habit, has had an attack of gout in the stomach, and is at present subject to a gouty affection of a very extraordinary character. After labouring for some time under languor and weakness, accompanied by spasms, pain, and sense of weight in the stomach, the pain of the stomach ceases, and his face begins to swell at various points, generally commencing on the forehead, and involving the cheek and eye, so as to close up the latter. He first feels as if a small current of air was directed on the face; then, as it were, the fillip of a finger, or the bite of a gnat; and, on looking in the glass, he suddenly perceives a tumour rising on the forehead, which, in the space of half an hour, becomes as large as a pigeon's egg, and, as he expresses it, moves down until it closes the eye. Sometimes it attacks his lips, and other parts of his face, but never affects his nose. These tumours have also appeared on various parts of his body; and he observes in his letter to me, that he is sometimes led to think that they attack his stomach also. Before and during an attack of the face, which generally occurs on the left side, the discharge from the nostril of the affected side ceases. But what is chiefly remarkable in this case is the singular character of the local affection. The tumours arise, run through their course, and disappear, in the space of a few hours; and on the following day there is no trace of their existence. Sometimes the lips, inside of the mouth, palate, and uvula, are attacked, giving rise to very considerable inconvenience. Were such tumours to occur in the neighbourhood of the glottis, I need not say that they would be pregnant with danger of no ordinary character. I may observe that this gentleman has derived great benefit from the use of hydriodate of potash, and from decoction of sarsaparilla with nitric acid, and that his health is at present much improved. His case presents a very curious example of transient local inflammation depending on the gouty diathesis.

Having touched on the subject of anomalous local affections as

connected with the gouty habit, I may be allowed to refer to a subject on which I have already published some observations.

In a paper inserted in the Dublin Medical Journal for March, 1836, I noticed the morbid habit which some individuals have of grinding the teeth, and detailed some facts in illustration of this affection. I have now seen several cases of this kind, and I have observed that they all occurred in persons of the gouty diathesis. The grinding of the teeth continues for years as a daily habit, and produces very remarkable changes in the conformation of these organs, affecting sometimes one side of the jaw, sometimes both; so that in confirmed cases we frequently find the teeth ground down to the level of the gums. There is not at present the slightest doubt on my mind, that the irritable state of the dental nerves, which gives rise to this irresistible tendency to grind the teeth, depends chiefly on the existence of gout in the constitution. I may observe, however, that in many persons in whom the teeth are found worn nearly to the gums, there appears to be another cause in operation. Thus, in cases of indigestion, it is not unusual to find the enamel of the teeth partially or considerably worn away, long before the natural time; and in such instances we used formerly to attribute the injury to the generation of acids in the stomach. The researches of Donné and Thomson, however, have shown that the saliva is subject to very remarkable alterations in certain forms of dyspepsia, and that whenever the disease is accompanied by much irritation of the gastric mucous membrane, and derangement of its secreting functions, the saliva becomes extremely acid, and, of course, capable of corroding the enamel of the teeth. The following case has recently come under the notice of Mr. Pakenham, of Henry street:—

A gentleman, aged 45, slightly made, but muscular, and born of healthy parents, was attacked with shivering and loss of power of the right side after a severe wetting. He recovered under appropriate treatment; but about a year afterwards began to observe in himself a tendency to grind his teeth, which gradually increased to such an extent as to prove a nuisance to himself and every one about him. Under these circumstances he consulted an eminent surgeon in Dublin, who applied the actual cautery behind one of his ears, slightly affected his system with mercury, and extracted one of his teeth—all with considerable relief, which lasted for about six months. He then became as bad as ever, and applied to another surgeon, who tried iron in every form without success; and subsequently to a third practitioner, who used in addition leeching, blistering, pustulation with tartar emetic, and various other remedies, but without any favourable result. All this time his medical attendants, so far from suspecting the presence of gout, ridiculed the idea of its existence.

About three months ago this gentleman came to Dublin, went to dine at the house of a friend, and with some others, supped late at night, and drank some whiskey punch. Next day he had vomiting,

purgings, and epigastric tenderness, and on the following day the ball of his great toe became swollen, hot, and exquisitely painful, leaving no doubt as to the nature of the affection. In this gentleman's case the grinding of the teeth is not constant, but it is always greatest when the stomach is most deranged. The teeth in the under jaw are all sound; three or four of the molars of the upper jaw have been extracted. The four upper incisors are ground nearly half way through to the gum, on the inside, while the lower are very little worn. By pressing the tongue against the upper incisors, or by touching a certain point of one particular tooth, he can at any time arrest the tendency to grind, and can suspend it as long as pressure is continued in the manner just described.

With the view of further illustrating the varieties of gout, I shall detail the following remarkable case, which came recently under my notice:—The patient, a gentleman of large fortune, is of a strong and athletic frame, about five and thirty years of age, and a member of a family subject to gout. He was much addicted to field sports, and accustomed, in cold weather, to frequent immersion of his feet in cold water, in pursuit of his favourite amusement, snipe-shooting. The consequence of this exposure has been, that he has been labouring for some time under a neuralgic affection of the lower extremities, which commenced in his feet and ankles, and extended gradually upwards, involving the whole of the lower extremities as far as the hips, and giving rise to sufferings of a very intense character. In a lecture formerly published, on creeping paralysis, I noticed that repeated exposure of the feet to cold seems often to lay the foundation of this disease. Now in this case there is some danger that the gentleman, were proper measures neglected, may ultimately become paraplegic, or even generally paralytic. I do not bring this case forward as an example of gouty pains gradually advancing from the extremities towards the spine; for although I strongly incline to the opinion that his complaint is of a gouty nature, and although most of his medical advisers have suspected a gouty complication, still this is by no means a decided point.\* Be this as it may, his case presents a very interesting specimen of creeping neuralgia, chiefly affecting the cutaneous nerves, (nerves exclusively destined to perform the function of sensation,) but gradually implicating the nerves of motion in the disease. I shall now proceed to lay before you the details of this case, which have been noted with singular accuracy and ability by the gentleman himself. In a letter to me he observes—

“As you wish for a description, in writing, of the manner in which I am affected, I subjoin every particular I can think of which seems likely to throw any light on the subject.

“It is now nearly five years since I began to suffer severely from

\* I have since seen his usual attendant, Dr. Little of Sligo, one of the most experienced and skilful physicians in Ireland, and am much gratified by finding that Dr. Little's opinion exactly agrees with mine, as he considers the case to be gouty neuralgia.

pains in my limbs, which for the last two or three years I have looked upon as neuralgic. About a year previous to that time I had occasional pains in one foot, which increased so as to become violent on one occasion, after a long ride. I had, however, been always in the habit of riding, and considered that exercise to agree particularly well with my health. Indeed, I had found hunting of great use to me, when suffering from liver complaint, having had inflammation of the liver twice in my life. It is now fourteen years since I had the last attack of liver disease, and I very seldom have pain in my side; whenever it occurs, it is generally removed by the use of a little blue pill.

" When first the pains in my limbs commenced they were confined to my feet; then, for a long time, extended no higher than my knees; latterly they have ascended as far as my hips, where, and in the groin, I sometimes experience great suffering. I have had occasional twitches in my arms, and very slightly across the chest. The pain always comes on with sudden violence, which renders it very hard to bear, especially when it attacks me during sleep. I am frequently aware of its approach, from a general feeling of discomfiture and depression; from which, in the beginning of my complaint, I used to suffer very much for two or three days before an attack. These paroxysms have, for four years, shown a great tendency to periodicity, recurring generally once every week, commencing on Saturday or Sunday, sometimes on Friday, and lasting till Monday. They have twice or thrice lasted for a week together, but sometimes continue only a few hours. In the commencement I had occasionally been free from them for two or three months together; and within the last year was free from them, at two different periods, for a whole month. When in pain, I have never experienced the slightest alleviation from anything, except at times from a full meal of wine, particularly champaigne. I have often been unable to remain in bed, from the violence of the pain which is increased by the weight of the bedclothes, or the slightest touch of anything; even the air blowing on the part brings on violent torture: at the same time I can bear strong pressure, or even a blow on the parts, without making me worse. The pain appears to be quite on the surface, except that sometimes it seems deeply seated, particularly in the ankle-joint and shin-bone. It is unaccompanied by any redness or swelling, and flies instantaneously from one limb to the other, rarely occurring in both at the same time. It leaves behind great weakness of the affected limb, so as to oblige me to walk with a stick for some time, and occasionally with two.

" One very unpleasant consequence of the pains in my limbs is, that I now find that I cannot use exercise on horseback, if I leave it off for any time. I have found this and walking at all times conducive to my general health. Indeed I can still walk a good deal, even during the attack, although it is very painful, particularly when setting out. I find it necessary almost constantly to have recourse to aperient medicine — generally rhubarb pill. At

times I have had giddiness of my head, and noise in my ears, to a very distressing degree; and have had recourse to powerful purgatives, and even bleeding, to remove the symptoms, without effect. A medicine, principally nervous, in which gentian was an ingredient, relieved me at one time after finding the above remedies ineffectual. I have already tried iron, mercury, nitro-muriatic acid, stramonium, arsenic, and the external use of croton oil, without benefit, except that I felt rather better for a month after two of these remedies, but no longer, and the pain returned with great violence at the end of that period. The counter-irritation appeared to increase my sufferings. I have also tried anodyne embrocations without effect. Anxiety of mind, or annoyance, often brings on an attack. I even remarked the other day, that it came on instantaneously on breaking a tooth whilst eating. On the other hand, excitement, whether from a sudden necessity for exertion, as on occasion of an accident, or anything that gives a pleasing interest and occupation to my mind, such as travelling through an interesting country, seems to keep off, and even sometimes remove an attack."

In general, a regular attack of gout in the extremities is preceded by a longer or shorter period of constitutional disturbance and dyspepsia. We must not, however, in making the diagnosis between gout and rheumatism, consider this distinction as not liable to exceptions, for I have seen more than one case of hereditary gout, in which the arthritic attacks came on suddenly, without the slightest precursive derangement of the health, or the operation of any assignable cause. I have as yet seen no instance of a similar nature in acquired gout.

Another exception to the general rule is also worthy of notice. In general, a fit of the gout is preceded and accompanied by a scanty secretion of turbid high-coloured urine. As the fit goes off, the urine increases in quantity, becomes clearer and paler, and loses its tendency to deposit the lithates and purpurates. Now, in two cases of hereditary gout, I have seen this order reversed, and the approach of the fit announced by a great increase in the secretion of urine, which was quite watery and limpid, and continued so until the violence of the articular inflammation began to decline. The urine then became scanty, and deposited the lateritious and pink sediment in great abundance.

That the gouty diathesis may excite its specific inflammation in most of the tissues of our organs, is a fact generally admitted; but I regret to state that our knowledge concerning the effects which it produces in these various tissues is far from being accurate or extensive. Beere, M'Kenzie, Middlemore, and others, have done much towards elucidating its effects on the eye and its appendages; and we are tolerably well acquainted with its progress in serous, synovial, and fibrous membranes. What changes it produces in the secretions of mucous membranes, is a question which has not been studied with an attention commensurate to its importance. Thus, though all acknowledge the existence of gouty cough or

bronchitis, the diagnosis and history of this affection are still very incomplete. This has been acknowledged by Dr. Stokes, who has published by far the best account of bronchitis which has yet appeared.\* The effects of gout on the lining membrane of the urethra and bladder are better known and studied, but I think that much still remains to be done in this as in every other class of inflammatory diseases where the inflammation depends upon a constitutional taint.

In my published lectures I have long since expressed an opinion at variance with that generally taught concerning the bronchitis and pneumonia which accompany pulmonary consumption, and I have brought forward strong reasons for believing that too much importance has been attached, and attention too exclusively devoted, to the tubercles in this disease. Thus authors talk of tubercular pneumonia, where it would be more correct to designate the affection as scrofulous pneumonia accompanied by tubercles; they speak of tubercular cavities and abscesses in the lung, in cases where scrofulous cavities and abscesses exist. In fact, I repeat it emphatically, that the essential characteristics of phthisis pulmonalis are derived from scrofula. This it is which converts what would be common into consumptive pneumonia or bronchitis;—this it is which so often renders both incurable.

Tubercles and tubercular infiltration are mere results of nutrition morbidly modified by scrofula; they are effects, not causes; they often exist without scrofulous inflammation, and the latter may exist without them. It gives me much pleasure to find that these opinions, which I published two years ago, have received ample confirmation from the observations of Dr. Kingston, in a paper read before the Royal Medical and Chirurgical Society of London in April last, and shortly noticed in the Medical Gazette, April 29th, 1837.

At our next meeting I propose to follow up the important subject of gout.

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### LECTURE XIII.

On paralysis in general—On paralysis depending on affections spreading from the extremities of the nervous system to its centre—Gouty ramollissement of the spinal marrow; two remarkable cases of—History of this hitherto undescribed form of disease.

In pursuing the subject of my last lecture, I shall now turn to the consideration of some phenomena connected with the gouty diathesis, which possess a much deeper interest, and lead to views of far greater importance. I mentioned before, that we frequently

\* See a treatise "On the Diagnosis and Treatment of Diseases of the Chest," by Wm. Stokes, M. D. This work places its author among the first medical observers of the day, and will acquire for him an European fame.

observe flying pains, or twitches, in various parts of the body arising from a rheumatic or gouty cause; that in some instances, these affections appear to be limited chiefly to the nervous trunks or branches, and that we have thus what may be termed gouty or rheumatic neuralgia. We are familiar with rheumatic and gouty sciatica, and we know that the history and termination of this form of disease often prove it to be inflammation of a specific character, chiefly confined to the trunk of the sciatic nerve. Now it is not unreasonable to suppose that this specific inflammation of a nervous trunk or branch may, like other inflammations, extend farther, so as to involve parts of more importance to the economy. What I wish to draw your attention to is this—that in certain cases, where gout attacks the nerves, giving rise to gouty congestion or inflammation, frequently recurring, and acquiring increased strength and deeper root as it proceeds, the morbid affection may, after years, or even months, run on until it reaches the spinal cord, involving a certain portion or portions of that organ, and producing loss of sensation and motion commensurate to the amount of spinal derangement. This is by no means an anomalous occurrence; it is merely an instance of disease originating in the periphery of the nervous system, passing along the trunk of the affected nerve with a retrograde motion, and finally reaching the central parts. In my lectures published two years ago, in the London Medical and Surgical Journal, I pointed out this peculiarity in many affections commencing in the periphery of the nervous system, and showed how the disease extends gradually until it reaches the spinal cord, giving rise to various forms of paralysis. It is too much the custom to look upon paralysis as depending upon original disease of the nervous centres. I have proved, that, very often, disease commencing in the nerves of some particular part or organ may be gradually propagated to the spine, producing all the symptoms which are referable to an original affection of the nervous centres. In my lectures on this subject, I have brought forward numerous facts in proof of the propagation of disease from the circumference to the centre of the nervous system; and the pathological deductions I drew from these facts seem to me to include all the physiological discoveries made by Müller and Marshall Hall concerning what the latter terms the reflex functions of the spinal marrow. In these lectures I showed that enteritis, arising suddenly in two young and healthy persons, from indigestion and obstruction caused by an error in diet, was followed in both by well marked paraplegia. I instanced, likewise, examples of paraplegia connected with stricture of the urethra, and which were relieved by curing the stricture; and I detailed cases of acute and chronic affections of the uterus and kidneys, which had entailed on the patients, as a remote consequence of the original disease, loss of the power of motion in the lower extremities, sometimes partial and curable, sometimes irremediable and complete. The cases I am now about to relate form a most interesting and valuable addition to those referred to, and

enable me to carry the principle then advanced still farther, by proving that gouty inflammation of the nerves and the neurilema may, in process of time, extend to the spinal marrow and its investments, and give rise to derangements of the latter, terminating in ramollissement and structural degeneration.

The subject of gouty degeneration of the spinal cord has not been alluded to distinctly by any author with whom I am acquainted, and is, as far as I can learn, quite new. The deductions, therefore, which are drawn from my cases, must, of course, be subject to such modifications as may be derived from future experience, and must remain to be confirmed by further observation. It has been long known that gout may attack the brain, and the existence of gouty paraplegia is well known by practitioners who have studied attentively the progress of arthritic affections. Thus, in a case which I witnessed some time back, in consultation with Mr. Kirby, he prognosed the supervention of paraplegia at a time when the indications of its approach could not have been discovered by an observer of less experience and sagacity. I have already stated that gouty affections of the brain have long been known, and I am not sure that some of the older authors may not have alluded to gouty affections of the spinal marrow; but as our knowledge of the peculiar state of the brain and spinal cord, termed ramollissement, is comparatively recent, and not dating with any degree of accuracy earlier than the works of Abercrombie, Rostan, and other modern authors, it is obvious that any observations made by the older writers, concerning gouty affections of the nervous centres, can have no distinct reference to this lesion. The connection, therefore, of ramollissement of the spinal cord with gout, may be considered as now, for the first time, distinctly pointed out. As one of the cases which I am about to detail presented an example of the most extensive ramollissement of the spinal marrow on record, it would, on this account alone, be especially deserving of attention; but its interest is increased tenfold when placed in juxtaposition with the second case, so as to exhibit, in a striking point of view, the close resemblance observable in the march or progress of both, as well as the identity of the lesions discovered after death.

Mr. —, residing in the island of Anglesey, was very much addicted to field sports, and, while thus engaged, would occasionally remain for a whole day without food. He was also very fond of angling, and has been frequently known to wade up to his middle in water for many hours together, during very cold weather. His general health was good, and his habits were abstemious. In 1825, when about twenty-five years of age, he had fever, attended with inflammation of the joints, and said to be rheumatic: some pain and stiffness, and an evident enlargement of the knee-joints, remained after the other articular affections had disappeared; these symptoms however yielded, in a few months, to rest and appropriate treatment. His health also improved greatly, and he had no complaint of any kind whatever until the autumn of 1828, when he

had a slight attack of ordinary cholera, after returning from a shooting excursion. In the spring of 1832, he was attacked with pain in one foot, supposed to be of a gouty nature: this pain disappeared during a drive of fifteen miles in an open carriage, but a certain degree of tenderness remained, and was always felt, more or less, in the part originally affected. He had a similar attack of pain and tenderness in the same foot in the following autumn. At the time when this attack commenced he was twenty miles from home and observed that during his journey the pain became diminished as before, and in a few days subsided altogether. In August, 1833, he had a similar, but much more severe attack; the pain was much more violent than before, and both feet were affected. This, however, did not prevent him from following field sports as usual; he went on horseback to the mountains to shoot grouse, and to this exercise, and drinking a bottle of wine, he attributed his speedy, or rather sudden recovery from the pain in his feet.

Hitherto we have seen a naturally strong constitution struggling successfully against exposure to cold, imprudent habits, and a most injudicious method of disturbing, or rather repelling, local inflammation depending on a gouty diathesis. It is not easy to explain how it happened that driving in an open carriage, or riding over the mountains, so effectually cut short the paroxysms of gout in the feet; but it is enough to know that the fits were suddenly and imprudently arrested, to be prepared for the consequences which ensued — viz., an irregular distribution of the gouty effort, and its determination to internal organs.

In September, 1833 — that is, about a month after the sudden subsidence of the last attack — he was seized with a violent colic, accompanied by obstinate constipation. The pain was very severe, but he suffered more from a general feeling of restlessness (a restlessness beyond belief, as he expressed it) than from actual pain. He was also greatly annoyed by singultus, and was jaundiced, after recovering from the attack of colic. In a lecture already published, I have mentioned some cases of jaundice supervening on arthritic affections; in such instances I am inclined to think that it depends on rheumatic or gouty hepatitis. In January, 1834, he had another attack of colic, preceded by a fit, the precise nature of which I was unable to ascertain. As these abdominal attacks frequently recurred, I shall give a description of one of them, as communicated to me by Dr. Llewelyn Jones, jun., his attending physician, a gentleman who justly enjoys a high reputation in his profession. "A dull, wearing, and fixed pain would attack the patient in the region of the colon: this pain was not increased by pressure, and was accompanied by nausea, occasionally by vomiting, and always by obstinate constipation. These symptoms were attended by a most distressing sensation of restlessness and anxiety. They lasted, on one occasion, for three days and nights before I could get the bowels opened, when they were immediately mitigated. The pulse was never quickened, and in general remained natural; but if the

attack was prolonged, it became weak. There never was any fever, or any well-marked indication of inflammation in the abdomen. These attacks were always preceded or followed by a gouty affection of the feet."

The attacks in the stomach and bowels recurred frequently, and always with the same symptoms, until August, 1835, when a visible tremor of the fingers became observable: during some preceding attacks he used to complain of weakness of the wrists and pains in the fingers, particularly the last joints. As the disease progressed, these pains became more intense and extensive, and the torture he felt in the hands and arms was beyond description. After August, 1835, he began to lose the use of his arms, the tremor increased, and he began to complain of stiffness about the neck, with great restlessness and anxiety. The abdominal attacks came on occasionally, but not so severely as before. The arms became gradually weaker, until the loss of muscular power was complete, and they were greatly emaciated; but Dr. Jones, who had the patient under his observation until August, 1836, could not detect any evident diminution, either in the upper or lower extremities, and the intellectual faculties remained perfectly unimpaired. In October, 1835, two months after the state of the upper extremities had indicated the approach of paralysis, the lower extremities became similarly engaged: they were affected with tremors and weakness, and in the following December the patient had an attack of violent pain, with swelling and increased heat in the ball of one foot, which was pronounced to be of a distinct gouty character. After each attack of pain in the feet, as I have been informed by this gentleman's sister, the loss of power in all his limbs increased, and if he gained a little strength in the intervals between these attacks, a recurrence of the paroxysm always made him worse than before.

In February, 1836, I went to Anglesey to visit this gentleman, and saw him in consultation with Dr. Jones and Dr. Williams of Denbigh. After a minute examination of the history and symptoms of the case, I declared it to be my opinion that a gouty inflammation had attacked the nerves of the extremities, and had finally extended to the spinal cord and its sheath. I said, that at an earlier period of the disease I would have advised salivation by mercury, but as that was inadmissible under the existing circumstances, we should have recourse to other measures. I forgot to state that from the commencement of the disease the advice of Sir B. Brodie and other eminent practitioners in London had been obtained by letter.

It would be useless to detail the various general and local remedies fruitlessly employed in this gentleman's case. He went to Liverpool in August, 1836, for the benefit of further advice, but finding no relief, returned to Denbigh, where he died in the ensuing October. For some time before his death he was greatly emaciated, and quite paralytic in all his limbs, but retained his intellectual faculties entire to the last. His body was examined by Mr.

Williams, whom I had met in consultation in the preceding February. This gentleman informs me that the viscera of the thorax and abdomen were healthy and normal, that no derangement or lesion of the brain could be detected, but that the spinal cord opposite to the last cervical and first dorsal vertebrae was softened to the consistence of thick cream; the remainder of the cord was also softer than natural, but did not present anything peculiar in other respects.

In a letter which I have since received from Mr. Williams, (to whose kindness I am much indebted, and to whose zeal and professional skill I can bear ample testimony,) he expresses himself with regard to the nature of the patient's disease in a way which confirms the views I have taken. He observes, "I once saw Mr. — in an attack of gout in the feet about three years before his death. There was much pain, and a decided gouty blush. Exposure in fishing and shooting to a very imprudent degree, while under the influence of these gouty attacks, I have no doubt did much to render the disease irregular and erratic."

The fact that the tremors and loss of power commenced in the arms two months before indications of paralysis of the lower extremities appeared, is sufficient evidence to prove that the spinal marrow was not the point from which the diseased action proceeded originally; for had this been the case, an affection of this organ, sufficiently violent to give rise to paralysis of the upper extremities so gradual in its progress and so well developed, must long before this period have occasioned paralysis of the legs also. There is a striking analogy between the progress of the tumours and paralytic symptoms in this case and in cases of painter's colic; and the analogy likewise holds good as to the violent spasmodic affection of the bowels and the constipation observed in both. It is further worthy of notice, that in painter's colic the nervous affection is accompanied by pain and weakness of the extremities, and ultimately, although long after the commencement of the disease, by spinal tenderness — a fact which has been already noticed by Dr. Bright. Again, in painter's colic, as in the disease which I have just detailed, the affection of the spinal cord, and the consequent paralysis, are evidently subsequent to the disease of the peripheral portion of the nerves.

The next case which I shall now proceed to detail, is one of equal interest and importance. A gentleman of robust frame, aged about 55, and having an hereditary predisposition to gout, to which his father had been a martyr, and which had exhibited itself in one of his sons at the early age of 13, consulted me on the 7th of June, 1836. Being a man of extensive landed property, he resided chiefly in the country, and was in the habit of using much active employment and exercise, but indulged rather freely in the pleasures of the table. After suffering much annoyance from dyspeptic attacks, and various premonitory symptoms, he had a regular paroxysm of gout in the spring of 1828; he had a similar one in 1830, and another

in 1832, each occurring, as before, during the spring season, and remarkably severe. During the year 1832 he had several slight returns of the complaint, and in January, 1833, he had an alarming attack of an enteritic character, accompanied by spasms of the stomach and acute pain of the extremities. In the autumn of 1834 he suffered greatly from a nephritic affection, and got relief after passing a considerable quantity of uric acid gravel. In the spring of 1835 he had a fall from his horse, and for some time afterwards complained of pain in the small of the back and around the trunk. He recovered, however, and during the summer and autumn of that year remained pretty well; but in the last week of December caught cold, which was followed by severe cough and pains in the chest and feet: the latter were then considered to be the effects of gout. From this period his health, though often apparently restored, was never firm: he became subject to sudden attacks of pain, particularly in the chest, which gave him much uneasiness. On the 3d of June he consulted a physician in his neighbourhood, to whom he described his ailment as "a slight pain in the right side, which troubled him only a short time before he got up in the morning;" this he stated he had felt occasionally for two months before. A very careful examination was made over the situation of the liver, the place in which he said he felt pain, but no tenderness or swelling whatever was detected, nor was there any in the direction of the spinal cord. His pulse was at this time perfectly regular, his bowels natural, and no dyspeptic symptoms existed. He used, by the advice of his physician, tonic and laxative pills, and a stimulant emulsion.

When he consulted me on the 7th of June, 1836, I found him labouring under what appeared to me to be pleurodynia of an intermittent and gouty character. During the day he was perfectly free from pain, but in the evening the pain commenced, and continued with violence until morning. It is unnecessary to detail here the various local and constitutional remedies which I employed in this gentleman's case, but without any favourable result. From the middle of June his symptoms became worse; during the first part of the night his pains were very severe; towards morning he usually obtained relief by lying on his face, and carefully avoiding all motion. About the latter end of July, the pain, which had been almost constantly felt at the right side, moved to the left, imparting at one time the feeling as if a spear were passing through the diaphragm, and at another resembling the sensation as if these parts were squeezed in a vice. When he was in the horizontal position this pain was accompanied by a sense of weight; and at times the pain would shoot upwards to the clavicles, producing tenderness of the intercostal spaces. When the diaphragm was free from pain, it most commonly attacked the postero-inferior edges of the scapula, and the dorsal region in its vicinity. In August he tried the use of the warm bath, and found temporary relief from the first he took; he remained too long in the second, which was heated to the tem-

perature of 100, and nearly fainted. He used the warm bath six or eight times, but found no material benefit from it, and could not bear the pain produced by the jolting of his carriage in going thither. About this time there was a visible alteration in his gait and figure: the left shoulder was elevated, his whole frame attenuated, and his face pale; he had nearly lost all power of bending the spine, and walked with a peculiar stiffness of gait, as if his arms were pinioned. On the morning of the 21st of August he stated that he had suffered great agony during the night, and on its abating, considerable tumefaction was observable under the right ribs. Dyspeptic symptoms now became urgent, his urine scanty and turbid; he became melancholy, and his mind was wholly occupied with sad presentiments. At my recommendation he came to town, in order to place himself under my more immediate observation, and to have the benefit of a consultation. About the 30th of August he got, to his great joy, an attack of gout in both feet; while this lasted, which was for about six days, he had complete relief from the agonising pains in the diaphragm and chest. The interval of tranquillity was, however, but of brief duration; the inflammatory affection of the feet suddenly subsided, and the pain attacked the diaphragm with increased intensity. His strength, which had been rapidly failing, now gave way, and he became quite paraplegic. About the 10th of September the abdomen became engaged, without any alleviation of the thoracic symptoms, and he began to complain of constipation, tympanites, and abdominal tenderness. The mucous membrane of the bladder became next affected; he had retention of urine, with great irritation of the prostate gland, and it was necessary to draw off the water with the catheter several times in the day. This state continued from the 22d of September to the 10th of November, when the sphincter of the bladder became paralysed, and the urine drained off as fast as it was secreted. During all this time the urine continued to present the characteristic marks of the lithic acid diathesis in an extreme degree, and contrasted strongly with the secretion furnished by the inflamed mucous membrane of the bladder, which consisted of a grayish or whitish-yellow, viscid, and somewhat puriform mucus, containing either a free alkali, or an alkaline carbonate. This secretion was extremely adhesive, and hung down in long ropy filaments when the vessel in which it stood was inverted. The nature of this mucus was such as to prevent any reaction from taking place between its own alkali and the acid of the urine. The co-existence of two secretions in the bladder — the one alkaline, and the other acid, as observed in this case — is extremely curious.

In this way the patient's sufferings went on every day increasing, and requiring the most extraordinary care to produce any alleviation, a task which was discharged with the most indefatigable humanity and attention by Mr. Richardson of Sackville street, to whom I am indebted for most of the details connected with the earlier history of this case. About ten days before his death, the

extremities, upper, as well as lower, and the trunk, became quite paralytic; and from the cervical vertebræ downwards, all power of motion and sensation was lost. His voice now became weak and inarticulate, deglutition was greatly impeded, and he finally sunk on the 27th of November, 1836.

It may be necessary to state, that, at the time the paraplegia was beginning to seize on the extremities, the patient was much annoyed by occasional involuntary jerkings of the weakened limbs. This morbid action of the voluntary motion had completely ceased.

This gentleman's body was examined twenty hours after death, by Mr. Adams. The body and limbs were greatly emaciated, and there were several sloughing sores on various parts of the body and limbs, particularly over the scapulæ, sacrum, and ileum. The brain was perfectly healthy, with the exception of a slight effusion under the arachnoid, and into the fourth ventricle. On opening the spinal canal, which was done with extraordinary care and accuracy, the spinal marrow, from the fourth cervical vertebra down to its dorsal termination, was found converted into a morbid mass, of an ash-grey colour and pulpy consistence. The theca was quite healthy; but on the first transverse section of it a great quantity of yellow serum flowed out, emptying at the same time the fluid contained in the fourth ventricle of the brain. When the medulla spinalis was slit from above downwards, various shades of colour were noticed on the surfaces of the sections. Opposite to the third dorsal vertebra a blackish colour prevailed; and from this downwards a yellowish hue was noticed. Two little tumours, about the size of filberts, were found attached to the crura of the fourth dorsal vertebra; these, as Mr. Adams remarked, were in all probability merely accidental formations. The bladder was very much thickened in all its coats, and was so contracted that it could not contain more than three ounces; its internal surface was of a dark green colour, approaching to black. The ureters were also thickened, the kidneys enlarged, and their lining membrane of the same dark colour as the bladder. The pelvis and infundibula of the kidneys were dilated, and contained a reddish diseased urine, with some puriform matter, the odour of which resembled that of the urine passed during the three weeks previous to his death. The other viscera did not present anything worthy of remark.

In order to understand the nature and progress of a disease like this, which travelled in a retrograde direction along the nerves and their sheaths to the spinal marrow, it may be well to point out some of the more striking phenomena by which it was characterised. In the first place, the long continuance of the pains at one side of the body only is in itself a demonstration that the disease was then situated in the peripheral extremities of the nerves, and not in the spinal marrow; for it has been well observed by Ollivier, that inflammation of the spinal marrow or its sheath can never remain confined to one-half of either for more than a very limited period. Indeed, so narrow is the cavity in which these parts are contained,

and so intimate is the connection of their constituent parts, that it is quite impossible for inflammation to remain more than a few hours, or at most a day or two, confined to either side.

Some facts connected with disease of the spinal vertebræ, and the pains accompanying the progress of that disease, may appear to contradict this view of the subject; for in vertebral caries pains are often felt at one side, or in one limb — nay, they often cease, or seem intermittent. Now, in order to explain this we have only to recollect that here the inflammation does not commence in the spinal marrow or theca, but in the bones, and that the nerves, after their exit from the spinal cord, are affected in all cases before the cord itself. The reason is obvious; the affection of the nerves is secondary, and solely derived from their proximity to the inflamed bone and investing tissues; and consequently the nerves on one side may be effected, while the corresponding nerves on the other side escape for the time, and until the disease in the bone extends itself to their neighbourhood also. This view of the subject has not escaped the notice of German pathologists.

In the case above related the pains continued in one side for months, and were then suddenly transferred to the other, an occurrence which is quite irreconcilable with the idea of their dependence on primary spinal disease. The well-marked ease the patient experienced when the gout appeared in the feet, and the perfect intermissions of pain which he frequently enjoyed during the earlier stages of the complaint, afford strong evidence that the pains, however violent and excruciating they might have been during the paroxysms, did not depend on an original affection of the spinal cord. Had the fall which this gentleman received, or any other injury, induced inflammation of the spinal cord, and subsequent degeneration of structure, the order and course of his symptoms would have been very different, and long intervals of comparative ease would not have intervened between the appearance of the first pains and the subsequent paralysis.

When paraplegia originates in disease of the spinal cord itself, retention of urine, or irritability of the bladder, often announces the approach of the disease long before the loss of power in the limbs becomes evident; whereas, in all those cases in which the paralysis creeps from the extremities along the nerves towards the spinal marrow, the bladder is affected only at a late period of the disease, as occurred in the case which I have just detailed. Finally, the remarkable similarity which exists, in various points, between this case and that of the Welsh gentleman, who had never met with any accident or injury, and in whom a considerable degree of râmolissement was observed, leaves no doubt that in both instances the disease commenced with gouty neuralgia, and inflammation of the nervous extremities and their sheaths, which gradually extended to the central portions of the nervous system, and ultimately involved the spinal cord.

It is of great importance that practitioners should be aware of

this termination, and know that in gouty habits the sad results already noticed may be produced, particularly as a knowledge of this fact may lead them to the timely adoption of preventive measures. Having experienced the total inefficacy of colchicum, hydriodate of potash, strychnine, and all the usual remedies, in relieving or removing this form of disease, I would be strongly inclined to recommend the early insertion of issues over the spine, with prompt and decided mercurialisation. Mr. Colles has recommended the use of mercury in paraplegia, and cites some cases in support of the utility of the practice. It is to be regretted that he has not given any hints as to the mode of diagnosing the cases likely to be benefited by the mercurial treatment, from those in which mercury would be inadmissible. Hence his recommendation loses much of its value, and cannot serve as a guide to those who have to treat spinal diseases connected with paralytic symptoms. It appears, however, sufficiently plain, that mercury, employed at an early period of the disease, is most likely to prove serviceable where symptoms of paralysis arise from inflammatory affections of the nerves or their neurilema, or of the spinal cord and its sheath.

So far at present on the subject of paralysis, as connected with the gouty diathesis. I hope to be able, at some future period, to bring it again before you in a more complete and extended form.

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## LECTURE XIV.

Gout may affect the spinal marrow — Combination of arthritic inflammation with bronchitis — Effects of various remedies, particularly mercury — effects of this in chronic bronchitis — Dr. O'Beirne's plan of rapid mercurialisation in certain affections of the joints — Application of the same method to inflammation of the lungs of scrofulous character — Cases in illustration.

IN the two preceding lectures we proved that gout often attacks the nerves of the extremities in the first instance, and then pursues a retrograde course until it reaches the spinal marrow. It is an acknowledged character of gout that it wanders from one organ to another, and that it is very uncertain as to the periods and duration of its attacks, sometimes appearing to have ceased altogether, again only to return with redoubled violence. These characters of gout are strikingly displayed in the two cases I have related, where it finally seized on the spinal marrow; and it is quite possible that what took place towards the fatal terminations of these cases, may in other gouty subjects occur at a much earlier period, and without the previous occupation by the disease of the nerves of the extremities: indeed, there is no reason why gout should not attack the spinal marrow and its investing membranes in the first instance, or in consequence of metastasis. That rheumatism, the disease most

closely allied to gout, may do so, has been proved by numerous examples, of which we owe some of the most striking to Dr. Copland and Dr. Prichard, for the result of whose researches on this subject I must refer you to the article *Chorea*, in Copland's Dictionary of Practical Medicine, where you will find that rheumatism not unfrequently produces both acute and chronic inflammation of the spinal membranes. These observations I make with the intention of proving that my views concerning gouty affections of the spinal cord are borne out by analogy, and the experience of others with respect to rheumatism.

The case of Coghlan, who has been for some time an inmate of our chronic ward, demands a few observations. He was admitted for an attack of arthritis on the 10th of December, and since that period has been subjected to various modes of treatment. You will recollect that on his admission he stated that he had been attacked several times with rheumatic inflammation of the joints. Like most persons of his class, he has suffered greatly from repeated fits of illness, brought on by exposure to the same causes. One of the greatest misfortunes that can fall upon labouring men, is a severe attack of rheumatic fever accompanied by inflammatory affections of the joints; it not only renders them helpless and useless for a considerable time, but also in some cases leaves them cripples for life, and in addition, the nature of their employment constantly exposes them to relapses, which at length brings on incurable affections of the joints: we have, moreover, in this young man's case, a combination not unfrequent in patients of this description, namely, the effects of cold on the chest as well as on the joints, arthritis combined with inflammation of the bronchial mucous membrane. Now where the arthritic affection is very severe, and accompanied by high fever, the addition of bronchitis is a great aggravation. Every time the patient coughs he feels like one stretched upon the rack; at every convulsive motion of the chest a severe pang is felt in every joint, and the ordinary rate of suffering is increased to positive agony. A case of this kind is often hard to be managed, even when the disease is recent and the constitution sound; but when you have to treat a severe attack in a person who has repeatedly laboured under the disease, and whose vigour has been consequently impaired, the difficulty is greatly increased. Here much attention is required on the part of the physician. Where the combination is met with in a primary attack, I am generally disposed to regard both affections as of the same character, and not requiring any difference of treatment: I therefore attack the arthritis and the bronchitis with the same remedies, that is to say, venesection, leeches to the affected joints and over the chest, and large doses of nitre and tartar emetic. These remedies, however, are only calculated for the acute stage of a primary attack, and where the patient's strength is unimpaired; for when the disease is chronic, and debility present, you cannot venture on the use of large doses of tartar emetic and nitre. In such cases

much benefit is derived from the use of colchicum, particularly where the patient labours under more or less fever. The following is the form which I am in the habit of using, and from which I have occasionally derived much benefit.

R Misturæ amygdalarum, 3vij.; aceti colchici, 3ss.; acetatis morphiæ, gr. i.; nitratis potassæ, 3ss.; sumat cochleare unum amplum omni vel secundâ quaque horâ.

In Coghlan's case we tried this mixture with local applications to the joints and a blister to the chest, but found at the end of some days that there was no visible improvement in the patient. Now whenever a state of things of this kind occurs, no time should be lost; for rely on it, that where colchicum does not afford relief *in a short time*, and *in moderate doses*, there is no use in giving it a further trial. You have here to contend with two affections of a very serious character — one capable of rendering your patient a cripple for life, the other threatening him with suffocation, from an extension of the inflammation into the minute bronchial tubes, an occurrence which is most commonly followed by dangerous congestion of the lung. Under such circumstances, the only treatment you can adopt with a hope of speedy relief and ultimate success, is to lay aside all other remedies, and trust almost exclusively to the use of mercury. In cases of this kind do not hesitate a moment, but mercurialise your patient at once, if his constitution be at all capable of bearing it. The treatment which was followed in the case under consideration was this: — we gave the patient ten grains of hydrargyrum cum cretâ, four times a day; and with the view of relieving pain and the irritation of the bronchial mucous membrane, he took one drop of hydrocyanic acid and ten drops of tincture of hyoscyamus, in half an ounce of almond emulsion, three times daily.

Permit me here, to direct your attention for a moment to the influence which mercury exercises over inflammatory affections of the joints, and over certain forms of inflammation of the mucous membrane. I, in common with most practitioners, look upon mercury as a most valuable remedy in the treatment of arthritic inflammation, and in certain forms of bronchitis, but I do not, however, advise its indiscriminate employment, or bid you mercurialise every case of bronchitis or arthritic inflammation; you can cure very many cases of both without mercury, and you should only have recourse to it in emergencies, of which I shall speak afterwards, and where other remedies have failed. In treating bronchitis in general, I always try bleeding, leeching, blisters, and expectorants, before I have recourse to mercury. But where these fail, and the disease continues to wear a threatening aspect, you will often find that mercury will cure it in a very rapid and surprising manner. You had an example of this in a boy who was lately under treatment in the chronic ward. He had severe laryngitis with an extensive inflammation of the smaller bronchial tubes,

great dyspnœa, and considerable congestion of the lung, and you perceived that the moment he came under the influence of mercury all his symptoms were ameliorated. We gave the mercury originally for the laryngeal affection, but in giving it remarked that it would also cure the bronchitis, and such was actually the case. Observe, I do not give mercury in bronchitis as a general rule, — it is often unnecessary, and even sometimes wholly inadmissible. I will except from this that severe form of bronchitis, with congestion of the lung, in children after measles, which is best treated with calomel and ipecacuanha, as recommended by Dr. Cheyne. Many children were lost by severe attacks of this form of bronchitis, and by hooping-cough, accompanied by congestion of the lung, until Dr. Cheyne hit upon this simple but effectual plan of treatment. But in ordinary bronchitis of an acute character, and producing a tendency to congestion of the lung, I do not prescribe mercury until other means have failed.

Now I believe every practical man is aware that mercury is one of the best remedies we can employ in many cases of acute and subacute bronchitis, but perhaps it is not generally known, that even in some cases of chronic bronchitis, that is to say, where the patient labours under chronic catarrh, with asthmatic symptoms, not only relief, but even a complete cure, is occasionally effected by the use of mercury. One of the first cases of this kind which struck me very forcibly, was under the care of Mr. Porter. The patient, who laboured under an attack of venereal laryngitis, had at the same time chronic bronchitis, with puriform expectoration and hectic, and as the use of the stethoscope was not then well understood, was supposed to be labouring under phthisis. From the violence of the laryngeal symptoms, however, Mr. Porter was obliged to give mercury, which not only arrested the laryngeal inflammation, but also cured the chronic bronchitis. I recollect, also the case of an elderly gentleman, treated by surgeon Mitchell, of Harcourt street, for an attack of very long-continued chronic bronchitis, with asthmatic symptoms, and who was subject to paroxysms of coughing and violent dyspnœa, which sometimes lasted for twelve hours together. Now this gentleman, after the failure of various remedies, took mercury, and with the most marked and permanent relief of his pulmonary symptoms. I was, it must be confessed, greatly surprised by the effects of mercurialisation in this case, and it was quite a novel thing to me to witness a chronic, a very chronic bronchitis, with copious expectoration and frequently recurring dyspnœa, aggravated so as to endanger life by the least cold ; it was, I say, novel to me to see a patient so affected, radically cured by a mercurial salivation. Perhaps, however, nothing but the absolute refusal of the disease to yield to other remedies, could authorise the adoption of such a plan in the present state of our knowledge.

This puts me in mind of a plan which I have adopted within the last year, in the treatment of certain diseases of the lungs, and

on which I shall make a few observations, as it has not been spoken of by those who treat of the cure of pulmonary affections. I must here in justice confess that the idea of this plan of treatment is not solely mine, but was founded on an analogy derived from the researches and experiments of Dr. O'Beirne on scrofulous inflammation of the joints. An extensive experience and deep reflection first led Dr. O'Beirne to think that the acute stage of scrofulous inflammation of the hip and knee joint might be made amenable to active and energetic treatment; in other words, that inflammatory affections of the joints, which terminate in some of the worst and most fatal forms of disease, namely, *morbus coxae* and white swelling, might be checked *in limine*, and before the stage of hopeless ulceration was established. He therefore proceeded boldly and at once to try whether the disease might not be arrested in the commencement by rapid mercurialisation.

Observe, this idea was completely new, it had never occurred to any other person, and was diametrically opposed to the theories of the day. The prevailing opinion on this subject was, that mercury was inadmissible, and could only produce mischief in persons of the scrofulous diathesis. Every one said, do not give mercury in such a case, it exacerbates scrofula, it even brings on scrofula in many instances where there had been no appearance of it previously; you can do no good with it, and may do infinite mischief. Dr. O'Beirne, however, knew the difference between the proper and improper exhibition of mercury—between mercurialising the patient at once and fully, and then stopping, and the pernicious custom of giving long and irregular courses of mercury. He tried the remedy and succeeded, and the surgeons of Europe have justly appreciated the value and importance of his discovery. About two or three months before Dr. O'Beirne made his discovery public, I had translated, for the Dublin Medical Journal, a paper from a German author on the use of corrosive sublimate in baths, in the treatment of white swelling, and Dr. O'Beirne states that the publication of this paper gave him courage at the time in pursuing a plan of treatment so much at variance with the opinions of the day. I published this paper, however, at the time merely as a curiosity; it was a novelty in practice of which I had no experience, and could not offer any explanation. This was reserved for Dr. O'B. He has shown in his memoir on the subject, that if you give mercury so as to affect the system rapidly, you will frequently succeed in curing the disease, particularly in the commencement.

From this I was led by analogy to apply the same principle of treatment to incipient scrofulous inflammation of the lung, and I think I have often succeeded in checking at once this most formidable of human maladies. Phthisis, as every medical man knows, is capable of assuming a variety of forms, and presents at its origin much difference of aspect. In some, it rises slowly and insidiously, and the pulmonary symptoms are so quietly and gradually developed that it would puzzle an intelligent practitioner, who had

the most ample opportunities of observing his patient from the beginning, to say at what particular period distinct evidence of danger had been noticed. The reason of this is because the tubercular affection of the lung is in such patients only of secondary importance, the disease which produced it having affected the whole system before the lung was contaminated. This happens in some, but in others an opposite train of phenomena is observed, and scrofulous inflammation commences in the lung before any general contamination of the system has taken place. It is in such cases, and such only, that mercury ought to be tried, and it will avail nothing except where the commencement of the scrofulous inflammation of the lung has arisen suddenly, and in consequence of the operation of some obvious cause, as catching cold or the occurrence of haemoptysis. I think that too much stress has been laid on the affection of the lung by writers on phthisis. In some cases (I will admit even in the majority of instances) the disease commences in the lung, but in others it passes through many changes, and affects various organs before it attacks the lung. You will frequently see persons labouring under scrofulous irritation, accompanied by hectic, emaciation, loss of appetite, and excitement of pulse, long before you can find any trace of tubercular deposition in the lung. I am of opinion that many persons would die of phthisis even supposing they had no such organ as the lung.

But let us suppose the case of a person of scrofulous habit who gets an attack of fever, with local inflammation, and that this inflammation fastens on the lung. Take for instance the following case: a young man of robust and vigorous frame, but evidently of the scrofulous habit, who has laboured repeatedly under scrofulous ophthalmia in his infancy, and who has lost several members of his family by consumption, gets, we will suppose, a severe cold by overheating himself in walking into Dublin from the country on a damp evening. He is attacked next day with feverish symptoms and severe catarrh, which soon becomes a formidable bronchitis: but the young man, being of a vigorous habit and fond of company, continues to go out and expose himself to night air, until at length the catarrhal fever is changed into hectic, the bronchitis into organic disease of the lungs, tubercles become developed, and the disease passes into phthisis. Here, you perceive, a man gets an ordinary cold, which becomes a bronchitis; he neglects this, and it passes into disease of the pulmonary tissue and tubercular ulceration. Now this is a very common course of diseased action in persons of a scrofulous habit, and I have in many such cases, been able to trace the fatal malady to a common cold exacerbated by neglect and bad treatment. You perceive that I do not use the ordinary nomenclature of writers on consumption; I do not recognise the terms "tubercular inflammation" as connected with cases of this description; indeed, I am inclined to think that the whole theory of inflammation being excited in the lung by the presence of tubercles is founded on erroneous views. I have repeat-

edly found tubercles in the lungs of persons who died of other diseases, without any trace of inflammation around them, and I believe every pathologist will confirm this statement. From this and other reasons, I have been led to the conclusion that tubercles do not act in all cases as foreign bodies, and that the theory which attributes the origin of inflammation to their presence is wrong. In one of my published lectures, I have brought forward numerous arguments to show that we are in possession of a much truer and more intelligible pathological explanation of the fact in question.\* You may have scrofulous inflammation of the bronchial mucous membrane, or you may have scrofulous inflammation of the lung, singly or combined, or, what is most frequently the case, you may have either or both accompanied by tubercular development. The development of tubercles, however, in a case of scrofulous bronchitis or scrofulous pneumonia, is a coincidence, and not a cause ; and you may have either of those affections singly or combined, without any coexistent or preceding tubercular development. Most commonly scrofulous bronchitis and scrofulous pneumonia are conjoined ; the former seldom exists for any length of time without producing the latter, and the latter is usually attended by more or less derangement of the bronchial mucous membrane.

But what I chiefly wish to direct your attention to on the present occasion (and it is a matter of the deepest importance) is, can we prevent the development of phthisis in a person of scrofulous habit who has caught cold, got a dangerous attack of bronchitis or pneumonia, and is threatened with hectic ? I do not wish to enter here into any disquisition concerning the means to be adopted with the view of preventing tubercular deposition, or producing absorption when tubercular matter has been deposited in the tissue of the lung. To prevent tubercular deposition you must cure the scrofulous diathesis, if you can. But suppose you are called to a case of the kind I have already described, where a young man of scrofulous diathesis gets a bad bronchitis or pneumonia, exacerbates it by neglect, and is threatened with hectic, what is the best plan you can pursue ? My impression is that you should treat it as you would treat acute scrofulous inflammation of the knee or hip-joint ; in other words that you should mercurialise your patient rapidly and at once : do it suddenly and decidedly, but without pushing the mercury too far, and you will often arrest all the symptoms of the disease as it were by a charm. I could mention many cases which have been treated successfully in this way. I was very much struck by the case of two eminent medical practitioners who came to Dublin within this last year to place themselves under the care of Dr. William Stokes and myself. One was a person of

\* [There is no doubt of this, especially as to the scrofulous inflammation of the bronchial membrane. I have seen this extend much above the lower or proper bronchial portion, and affect particularly the nasal passages. This variety is most frequently accompanied by tubercles in the lungs, and usually yields readily to the use of iodine.—*Ed.*]

scrofulous habit, who had caught cold after taking mercury, and neglected it for three weeks. At the time we saw him he laboured under severe and harassing cough, considerable fever and emaciation, and was greatly alarmed about his condition. He had been several times leeched over the trachea by Dr. Stokes, but this, although an admirable remedy in many cases of bronchitis, failed in producing an amelioration of his symptoms, and from the persistence of his feverishness, emaciation, and harassing cough, serious apprehensions were entertained that his disease would terminate in phthisis. Having explained to our patient our views of the case, and our impression that mercury was the only remedy on which we could rely with any hopes of success, we ordered him to confine himself to his room, continue the application of leeches to the trachea, and take mercury. Now as this gentleman had come up to town under the impression that he was consumptive, we found some difficulty in persuading him to submit to this mode of treatment. He yielded, however, but with great reluctance. In the space of a week all his bad symptoms had nearly disappeared. As soon as he came under the influence of mercury the cough became notably diminished, and he recovered flesh and strength with surprising rapidity. The other was a physician from the north of Ireland, who was suddenly attacked by pulmonary apoplexy, and in a few weeks came to Dublin, harassed by a constant dry cough, which prevented sleep at night, and he was visibly emaciated and anxious. In him no hereditary tenderness to phthisis could be ascertained, but nevertheless Dr. Marsh, Dr. Stokes, and myself, considered the case as very unpromising, for although there was no acceleration of the pulse, the breathing was easily disturbed, and we could detect crepitus and some dulness above the right mamma, where it was evident the original seat of the hemorrhage had been. This case, too, which had resisted a mere antiphlogistic treatment, yielded in a most satisfactory manner to mercury.

Bearing these facts in mind, I think you will be prepared to admit that mercury is a most valuable remedy in the treatment of scrofulous bronchitis and scrofulous pneumonia — diseases which too often resist the ordinary modes of treatment, and which are unfortunately so often followed by fatal disease of the lung. Where a sudden attack of cold has produced inflammation of the substance or lining membrane of the lung in a person of scrofulous habit — where the attack is recent, and has occurred under circumstances which preclude any suspicion of previous tubercular disease — in such a case as this you will find mercury a most admirable remedy in checking symptoms often not amenable to other plans of treatment, and which if neglected or maltreated would in all probability end in phthisis. I was led to the adoption of this plan by the success which has attended Dr. O'Beirne's practice in acute scrofulous inflammation of the joints, and from observing that cases of unmanageable chronic bronchitis had been occasionally cured perfectly where mercury had been exhibited for other affections ; and

it is a curious fact that about the time I had fallen upon this mode of treatment, it suggested itself likewise to the minds of Dr. Stokes and Dr. Marsh, who can testify its utility: of course it will not succeed in all cases; and I have seen it fail in two where I had confidently expected benefit. Notwithstanding this it is a most valuable addition to our resources in certain cases that would end in phthisis.\*

About a year ago I attended a young gentleman, apparently of robust constitution, who died of phthisis ushered in by a frequently recurring hemoptysis. Shortly after his death, Mr. William Grady, one of our most diligent and intelligent pupils, called on me to visit the elder brother of my former patient. He had a constant hard, dry, and very distressing cough, which deprived him of sleep, and having continued many weeks had produced a most formidable degree of emaciation. Consumption was naturally dreaded. His pulse, however, was normal, and the stethoscope did not indicate any pulmonary lesion: still, as the case had refused to yield to all the ordinary remedies, including change of air, we felt very apprehensive as to the result. I confined him to bed, applied leeches over the trachea several times, and rapidly mercurialised him, and with complete success. He has continued well ever since.

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## LECTURE XV.

Hydriodate of potash in rheumatism — Sarsaparilla and nitre in chronic cough — Remarks on percussion — Clear sound with solidified lung — Fever with cerebral irritation — Employment of tartar emetic and opium — Success of turpentine.

I HAVE spoken on a former occasion of the utility of mercury in certain cases of rheumatic fever, where the inflammation of the joints will not yield to other means: I have now to add, that within the last year the hydriodate of potash has been found to be a most useful adjunct to mercury, and well calculated for following up and completing the beneficial effects produced by that remedy. In fact, in treating arthritic or rheumatic fever, when I have reduced the violence of the fever and of the inflammatory affection of the joints by means of bleeding and leeching, followed by tartar emetic or nitre, or both combined, or when after the antiphlogistic treatment, both local and general, I have produced a marked alleviation of the patient's sufferings, either by the use of colchicum or by the

\* [We are far from objecting to this practice in general terms, but we reiterate the cautions of Dr. Graves. We have for a number of years been accustomed to resort to the mercurial treatment, pushed pretty rapidly too, in the management of tuberculous inflammations of the serous membranes, including pleura, peritoneum, and pia mater. — *Ed.*]

use of mercury combined with opiates,—then, I say, we can employ the hydriodate of potash with the greatest possible advantage, as it quickly dissipates the remaining pain and swelling of the joints, and contributes powerfully to bring the disease to a speedy termination, while at the same time it greatly diminishes the danger of a relapse. I have experienced much comfort and feel much confidence in the treatment of rheumatic fever since I adopted this practice; and it now never happens to me to meet with cases which, in spite of all my efforts, become chronic, and confine the unfortunate sufferers to bed for months. You have observed, that in most cases of acute rheumatism affecting the joints, no matter what mode of treatment I adopt in the commencement and during the acme of the disease, I generally complete the cure with the hydriodate of potash, beginning with doses of ten grains, which are quickly augmented to twenty or thirty grains three times a day. It is generally given in decoction of sarsaparilla, to which some preparation of morphia forms an useful addition.

Iodine and the hydriodate of potash exert a very powerful influence over scrofulous inflammation, but their influence, as has been proved by recent experience, extends likewise to inflammations connected with other states of the constitution, and they are frequently exhibited now with the best effects in certain varieties of syphilis, pseudo-syphilis, gout, mercurial cachexy and rheumatism. The power of iodine in moderating mercurial salivation, and the severe ulceration of the mouth which frequently accompanies it, has been asserted by some and denied by others. Be this as it may, it certainly is an excellent adjuvant to our usual means for diminishing the pain and inflammation which attend periostitic affections, and many of the troublesome sequelæ of syphilis. I may observe also, that the hydriodate of potash has been found to prove a most valuable auxiliary in the treatment of chronic anasarca and ascites; and Mr. Swift informs me, that he has employed it with the most satisfactory results in the dropsy of scarlatina, particularly in children of a weak and cachectic habit. He uses the hydriodate of potash in combination with liquor kali, to which the tincture of digitalis is occasionally added.

I have been told likewise by some excellent practitioners, that they have derived much advantage from the ioduret of iron in rheumatic affections of the joints, after the acute stage has subsided. My own experience of the effects of this remedy is too limited to allow me to express any opinion on its merits.

Having spoken of mercurial salivation, it occurs to me this moment, that the remarkable fact of the difficulty of salivating infants and very old persons must depend in some measure on the undeveloped state of the parotid glands in the former, and their shrunken and atrophied condition in the latter. The apparatus connected with the insalivation of the food is comparatively but little required before the teeth appear in infancy, or after they have fallen in advanced age.

I wish now to make a few observations on the use of decoction of sarsaparilla and nitric acid in certain cases of chronic cough. The utility of this combination has been long recognised in cachetic states of the system and affections of the skin, whether syphilitic or mercurial; and it has also proved itself very efficacious in various species of sore throat, chronic pains, and other textural derangements of a slow and tedious character. The marked effects which the decoction of sarsaparilla and nitric acids produce in these diseases of the general habit, skin, and mucous membrane of the throat, led me to infer that the same combination might be employed with advantage in cases of chronic cough, attended with redness and relaxation of the mucous membrane of the fauces, elongation of the uvula, and some degree of general debility. I have observed that such cases are almost invariably accompanied by more or less derangement of the digestive organs and an irritable state of the general system; and from their analogy to other states of the constitution, in which nitric acid and sarsaparilla have proved extremely beneficial, I was induced to give this combination a trial; and I can now state that it has not disappointed my expectations. Decoction of sarsaparilla, given in doses of a pint daily, with a dram or more of nitric acid, has proved a most useful and valuable remedy in the treatment of cases of this description. It is scarcely necessary to observe, that in addition to the use of this remedy, change of air, moderate exercise and recreation, and a nutritious but not heating diet, are required. In some of these cases it will be also necessary to apply lotions of the nitrate of silver or sulphate of copper to the fauces and tonsils; and where the uvula is greatly relaxed, it will require to be frequently touched with the nitrate of silver, or even to be shortened by an operation. Guided by the same principles, I have frequently exhibited decoction of sarsaparilla with nitric acid in cases of persons of a reduced and relaxed habit who are troubled with a slight but frequently recurring cough or hem, and the expectoration of a few bronchial sputa, occasionally mixed with blood, which appears to come, not from the lungs, but from the eroded mucous membrane at the top of the pharynx and larynx. In such cases I have observed that the cough and expectoration took place chiefly in the morning after awaking, and in some had continued for weeks without any dyspnœa, pain in the chest, or fever. I may also remark, that the same combination may be often given with advantage to patients whose mouths have been recently made sore by mercury administered for the cure of bronchitis or pneumonia, and will occasionally be found useful in removing the still lingering remnant of pulmonary disease, at a time when mercury could not be pushed farther with safety.

Speaking of pulmonary affections leads me to notice a collateral subject of very great importance: I allude to percussion as a means of arriving at a true diagnosis in cases where solidification of the lung has taken place. It is generally believed, that in cases where the actual quantity of air in the lungs is morbidly increased or

diminished, percussion furnishes us with means of information adapted to every variety of case, and capable of unlimited application. This, however, is not the fact. It is true that when percussion furnishes positive evidence of increased pulmonary solidity, we may be pretty sure that solidification exists; but such evidence is not furnished by percussion in every case of the kind indiscriminately, for it now and then happens that percussion elicits a very clear sound from the parietes of the chest, corresponding to considerable solidification of the lungs within. Of this I have now witnessed several instances. You will ask, how then are we to explain this apparent contradiction between the results afforded by percussion? This is a question of much importance, and I hope the solution which I am about to offer will be found adequate and satisfactory.

An old man, named Foy, died lately, at Sir P. Dun's hospital, of hepatisation of the inferior lobe of the right lung, with numerous tubercular depositions in the upper lobes of both lungs. During his illness, I pointed out the existence of extensive hepatisation of the lower lobe of the right lung, in which perfect and decided dulness marked out accurately the space occupied internally by the solidified pulmonary tissue. But anteriorly and above, the parietes of the chest returned a clear sound on percussion, nor could a vestige of dulness be anywhere detected. Yet the whole of the upper lobes of this patient's lungs were occupied to such an extent by crude tubercles, that no portion of the upper lobes could be selected, equal to half the size of a fist, which would not sink in water. This was owing to tubercular matter, which occupied the pulmonary tissue in detached infiltrated masses, or in single crude tubercles. How, then, did it happen that such extensive solidification of the upper lobes existed without any corresponding dulness on percussion? A careful examination of the pathological condition of these lobes satisfactorily explained the anomaly. On accurate inspection, we found that although the solidified masses of the pulmonary tissue were extremely numerous, and predominated over the parts which still retained their natural vesicular texture, so that an extensive portion of the upper lobes seemed to be quite solid, yet the solidified portions were insulated and divided from each other, throughout the interior of the lobe, by intervening laminae of healthy pulmonary tissue, and on their surface were, for the most part, covered by a stratum of healthy vesicular lung, from a quarter to half an inch in thickness. Indeed, although the solidified masses (to use a geological expression) sometimes cropped up, and came to the surface, yet this was comparatively a rare occurrence; and by far the greater portion of that surface was composed of a thin stratum of pervious vesicular tissue. To this was owing the clear sound elicited by percussion.

You will recollect, therefore, that in certain (I will admit rare) cases of tubercular deposition in the lungs, the tubercular development may have proceeded to the extent of rendering the greater

portion of the upper lobes impervious to the air, and may have solidified those lobes considerably, and yet the solidified portions may be so divided from each other by laminæ of healthy lung, and may be so covered by a stratum of vesicular tissue, that the general result of percussion is to elicit a clear sound over the whole of the parieties of the chest corresponding to the affected lobes.

Since our last meeting, some cases of fever have occurred in our wards, which have presented too many points of interest to be passed over without any observation. A very curious case occurred here, in a man named Toole, who was admitted on the 4th of January. This patient is a robust labouring man, about thirty years of age, and had been labouring under maculated fever for ten or eleven days before admission. Of his history previous to admission we could learn nothing; but when he came under our care he appeared very ill, and exhibited great depression of the vital energies, so that we found it necessary to encourage reaction by the application of heat to the surface of the body, frictions, warm fomentations, and the internal administration of wine and carbonate of ammonia. On the following night reaction became established; next day he became irritable and restless, and towards night was seized with delirium. The nurse omitted to report his state to Mr. Parr, or the resident pupil; he was thus left without any treatment until next morning. Now, this is a matter of much regret to me, and I think I cannot do a more essential service to those who are about to enter on the practice of their profession than to impress, as strongly as I can, the indispensable necessity of watching fever patients with the most anxious and unremitting diligence. In a case of bad fever, a single visit in the day will never suffice; two, and even three visits a-day will be required; and, when the patient is in a doubtful or dangerous condition, it will be often necessary to have a properly educated medical person in constant attendance, prepared to meet every emergency, and counteract or modify every unfavourable change. Fever will often run on for several days without any change calculated to arrest our attention, or call for the adoption of any new measures, and yet, in the space of six hours, an alteration may occur, of which the physician should have early and full information.

Well, this man remained without any treatment for several hours after delirium commenced. On the 6th, we ordered his head to be shaved and leeched, and prescribed tartar emetic, in doses of a quarter of a grain, every second hour. Next day we found him as bad as ever. The tartar emetic had failed in diminishing the cerebral symptoms, and his delirium had rather increased. We found also, on inquiry, that he had had no sleep for the last three nights. His pulse was weak and rapid, his eyes suffused, his restlessness and delirium such that he required a person to sit by him constantly, and prevent him from getting out of bed. Under these circumstances, we ordered five drops of black drop to be added to each dose of the tartar emetic mixture, of which he took an ounce every

third hour, that is, about a quarter of a grain of tartar emetic. He took four doses of this during the night ; and next morning we found that the delirium and sleeplessness continued still unabated, and that the man was sinking fast into a state of stupor and insensibility. He neither answered questions, nor put out his tongue when desired ; he had great subsultus, and was muttering to himself with great volubility and rapidity of utterance. Indeed, his condition was such that I had no hope. Among other symptoms, I should mention that he had contraction of the pupils, a symptom of very unfavourable augury in fever. Having failed with tartar emetic alone, and afterwards with tartar emetic in combination with opium, I had now to seek for some other means of subduing cerebral irritation, and in this emergency had recourse to the use of turpentine — a remedy which I was inclined to adopt in preference to any other, as there was some fulness of the abdomen, and other symptoms indicating the existence of congestion of the intestinal mucous membrane. I therefore ordered two drams of the spirit of turpentine to be made up into a draught with a little oil and mucilage, and administered every second hour. Now this is a point in the treatment of this man's case to which I would particularly direct your attention.

I was guided here by a knowledge of the fact, that turpentine exercises a very remarkable influence over many forms of nervous irritation. I can refer for illustration to many affections of the nervous system characterised by excitement, in which turpentine has been employed with the most signal benefit. Thus, we frequently find it a most valuable agent in the treatment of chorea, of epilepsy, and of the convulsive fits of children. We have frequently experienced benefit from its use in the treatment of spasmodic affections of the stomach and bowels ; in hysteria, tympanites, and the subsultus of fever, we often derive from it the most rapid and effectual relief. You recollect a case of typhus which was lately under treatment in our wards, and of which one of the most prominent symptoms was general and continued subsultus ; and you have all witnessed how much relief the patient obtained from small doses of oil of turpentine. Hence I was led to conclude that it might be employed with benefit in the latter stages of fever, where vascular excitement is greatly abated, and where the most prominent symptoms are irritation of the nervous centres, with more or less congestion of the gastro-intestinal mucous membrane. In this case, however, I must confess I used it as a last resource, and did not anticipate the very striking results which followed so unexpectedly. After the second or third dose the patient had two or three full motions from the bowels, and shortly afterwards fell into a sound and tranquil sleep, from which he awoke rational and refreshed. He is now wonderfully improved in every respect, and I have no doubt that his convalescence will go on favourably.

There is one symptom in this man's case which is worthy of your attention, as connected with the history of fever, although in other

respects it does not seem to possess much importance. I allude to the bullæ which have appeared on the calves of his legs, on the inside of the ankles, and on the soles of the feet. This affection seems to belong to that class of eruptive diseases which are occasionally observed during the course of idiopathic fevers, particularly those which have arisen from the introduction of an animal poison into the system. Thus we sometimes find an eruption of pustules, sometimes of vesicles, (as the miliary); occasionally we have bullæ, and not unfrequently erysipelas.

We have had another case of spotted or eruptive typhus, in a man named Henry Harpur, which has exhibited in the strongest manner the value of a combination of tartar emetic and opium in diminishing cerebral irritation, and bringing about a favourable change in cases characterised by symptoms of alarming and imminent danger. Those who have witnessed Harpur's case will confess that few cases could present a more unpromising appearance. He had violent delirium, requiring the restraint of the strait waist-coat, a furious aspect, suffusion of the eyes, constant raving and muttering, and perfect sleeplessness. His pulse was weak, thready, and rapid; his tongue and lips parched, fissured, and black; his breathing quick and irregular; and his cerebral symptoms of such intensity as to leave little or no ground for hope. In addition, he had continued and general subsultus, and constant irregular motions of the extremities. Now this man has been rescued from a state of the most imminent danger, and restored to convalescence, by the use of tartar emetic and opium. Those who saw the case two days since, and who have noticed the remarkably improved state of the patient to-day, will agree with me in saying, that so favourable a result could scarcely be expected. In this case the tartar emetic and opium were combined with musk and camphor. Where great subsultus tendinum is present, in addition to the usual symptoms of cerebral excitement, I am in the habit of combining musk and camphor with tartar emetic, in the following form.

R. *Mucilaginis gummi arabici*,  $\frac{3}{2}$ ss. ; *syrupi papaveris albi*,  $\frac{3}{2}$ j. ; *antimonii tartarizati*, gr. ij. ; *camphoræ*, gr. xv. ; *moschi*,  $\frac{3}{2}$ ij. ; *aquaæ fontis*,  $\frac{3}{2}$ ivss. M.

The camphor should be previously triturated with a few drops of alcohol, and the whole must be rubbed up in the form of an emulsion, of which a table-spoonful is to be taken every second hour, until copious discharges of fluid yellow faecal matter take place,—an occurrence always attended by much relief of the cerebral and nervous symptoms, and which marks the period at which we ought to desist from the further use of tartar emetic. In the case which we are now considering, the medicine was administered in draughts, each of which contained half a grain of tartar emetic, ten grains of musk, five grains of camphor, and about ten drops of laudanum. After taking three such draughts the patient fell into a quiet sleep, which continued for several hours. He awoke quite

rational; and since that period his improvement has been steady and progressive. I have not time to enter any further into the particulars of this case at present, and merely allude to it as one of those instances in which we have succeeded in allaying symptoms of cerebral excitement, where the state of the patient afforded very little grounds for any hope of a favourable termination.

At my next lecture I purpose to lay before you, in detail, the history of the results which have attended the employment of tartar emetic and opium in fever, with some observations on its value as a therapeutic agent, and on the cases to which it is most peculiarly adapted.



## LECTURE XVI.

On the efficacy of tartar emetic and opium in fever with much cerebral disturbance; illustrated by cases.

At my last lecture, I alluded to the use of tartar emetic in the treatment of the cerebral excitement and determination to the head, which are so frequently witnessed in the advanced stage of the present epidemic, typhus; I shall now proceed to mention some of the beneficial effects derived from this plan of treatment, as illustrated by cases which have recently occurred in my own practice, or in that of other members of the profession.

Did I bring forward this plan of treatment as infallible, or if I boasted that it never failed, then indeed you might well doubt my judgment in recommending it to your notice, for infallible remedies never earn the sanction of experience; but such is not the fact. This treatment we ourselves have seen will not always succeed; nay, we must acknowledge that it has occasionally disappointed us even where we seemed justified in calculating upon success. But, gentlemen, we must recollect that every useful remedy is subject to the same charge, and that in the long list of therapeutic agents, there does not exist a single medicine which is fairly entitled to the appellation of a true and infallible specific.

We have failed in several cases with tartar emetic, either alone or combined with opium and other medicines, and patients labouring under typhus have fallen victims to cerebral disease, although we applied the remedy with all due diligence. Yet I think it but fair to observe, that most of the instances in which we failed were cases that had come under our notice at an advanced stage of fever, and where the cerebral symptoms had been wholly overlooked or improperly treated in the commencement of the disease. I may observe also, that cases of this description in which the cerebral symptoms have been permitted, before admission into hospital, to form themselves fully, are exceedingly difficult to manage, and ter-

minate fatally at a much earlier period than the ordinary cases of typhus observed in private practice.

Maculated typhus with determination to the head, when improperly treated, terminates not unfrequently about the tenth, eleventh, or twelfth day; sometimes it is protracted to the thirteenth or fourteenth, but most usually it ends fatally about the eleventh or twelfth. In neglected cases, the cerebral symptoms frequently assume a fearful violence on the seventh, eighth, or ninth day, and in such instances it must be expected that the best and most appropriate plan of treatment will fail in rescuing the patient from impending dissolution. If, however, we can find out a remedy, which, in many cases, apparently desperate, succeed in rescuing the patient from the jaws of death, we must be satisfied. A case of this description has occurred since our last meeting. It has excited the attention of all who witnessed it, as well from the violence of the symptoms, and the apparently hopeless state of the patient, as from the rapidity with which the exhibition of the remedies employed was followed by a striking and decided alteration in the symptoms. Any one who saw him yesterday, would scarcely recognise him as the same individual to-day.

This man, named Fogarty, was admitted about the seventh or eighth day of his fever, according to the account of his friends. Of course, in such cases, we cannot give implicit credence to those loose statements, for the lower class of persons in this country never calculate the time during which the patient remains out of bed struggling against the disease, — a period which, in a people inured to suffering and privation, frequently lasts three, four, or even six days. Well, this man aged five-and-twenty, and of rather robust constitution, was admitted on the 20th of December, being then about eight or nine days ill. Previous to admission he had taken purgative medicines, had his head shaved, and six leeches applied behind his ears, or to his temples, I forget which. Now all these measures, although perhaps insufficient, were extremely proper, and must have produced more or less benefit. When we examined him on the 21st, we found him in a state of high excitement, as manifested by continued mental wandering, incessant talking and raving, and frequent attempts to get out of bed. He had illusions of the senses of sight and hearing, consisting of terrific ocular spectra,\* and alarming sounds, which threw him into a state of intense agitation; his eye was red and watchful, and he never slept. Here then was a very threatening array of symptoms; — perfect insomnia, ocular spectra, illusions of the sense of hearing, a fiery eye, and incessant mental wandering. To this was added, great de-

\* In a former lecture I mentioned that analogous symptoms result from increased or diminished sanguineous pressure on the brain; the ocular spectra in Fogarty's case evidently depended on determination of blood to the head, but in the case of a lady, the wife of an eminent physician, a continued and varied succession of spectral illusions formed one of the chief symptoms, produced by exhausting hemorrhage after delivery.

rangement of the whole nervous system ; his body was agitated from head to foot by continual tremors, and he had violent and persistent subsultus ; his respiration was interrupted, suspirious, and irregular, amounting at one time to forty in the minute, and a few minutes afterwards not exceeding twenty-five ; the acts of inspiration and expiration were extremely unequal, and occasionally accompanied by blowing and whistling. In a former lecture, I made some observations on this form of respiration, which I termed *cerebral*, from having first observed it in persons subject to apoplectic attacks, either before or during the paroxysms ; it is frequently observed in bad cases of fever, and is a symptom of the greatest importance. He also lay constantly on his back ; his pulse 120, soft, and very weak, so that the canal of the artery could be obliterated by very slight pressure ; his pupils were somewhat dilated ; tongue parched and brown in the centre, red at the edges and tip ; skin covered with maculæ ; abdomen soft and full. Those who have witnessed the case will acknowledge that the picture I have drawn is not too highly coloured, but, on the contrary, falls far short of the reality, and no doubt you all expected that if we did not succeed at once in arresting the progress of his symptoms, the case must have proved rapidly fatal. Observe the position in which we were placed. In the commencement of the fever, certain appropriate but inadequate remedies had been employed, and, under a treatment proper but insufficient, the disease had progressed ; it was an example of one of the worst forms of fever, characterised by intense cerebral excitement, and accompanied by total want of sleep, persistent delirium, and excessive disturbance of the nervous functions ; all these symptoms had come on gradually, and arrived at their acmè at a period when the low and debilitated state of the patient precluded the use of depletive measures to such an extent as to exert any efficient control over the most dangerous symptoms. The application of a few leeches would be extremely hazardous, and blistering would have been wholly useless and nugatory, for before a blister could rise the man would be dead. For these reasons, we concluded that the only remedy we could have recourse to with any prospect of success was tartar emetic. We therefore ordered a draught composed of two drachms of mint water, two of common water, and a quarter of a grain of tartar emetic, to be given every hour until it produced some decided effect on the constitution. You will recollect, here, that the scale was vibrating between life and death, that it was necessary that our plan of operation should be at once prompt and prudent, decisive and cautious. One of the pupils promised to stay by him the whole day and watch the effects of the remedy, and I determined to visit and examine him personally in the afternoon. In the course of four hours, he took four doses of the tartar emetic ; the first and second, in fact almost every dose vomited him, but not immediately. He retained each dose for a considerable time, and then threw it up. After the fourth dose, it began to act on his

bowels, and then the medicine was suspended for some time, and a small quantity of porter administered. When I saw him at eight o'clock in the evening, he had been freely purged, and had discharged a considerable quantity of bilious yellow fluid from his bowels. He had also enjoyed about an hour's sleep ; his respiration was now more uniform and natural ; his raving greatly diminished ; the subsultus and tremors were nearly gone, and the man appeared quite tranquil. I then ordered him a wine-glassful of porter, with two drops of black drop, to be repeated every second hour for three or four turns successively. I saw that the cerebral symptoms were evidently diminished, and that there was a tendency to returning tranquillity and repose, and I wished to follow up and assist the operations of nature. To-day this man is in a most favourable state. His skin is covered with a profuse warm perspiration, he has slept well, belly soft and natural, respiration slow and regular, and pulse diminished in frequency ; he is calm, rational, and composed, and I think I am not too sanguine in anticipating for him a speedy and certain recovery.\*

It is always an unpleasing and ungracious task for any individual to be obliged to come forward with proofs of the originality of his contributions to science ; this task some have endeavoured to impose on me, and have sought to impugn both the originality and utility of my method of using tartar emetic and opium in typhus fever. Their arguments do not require any answer, and may be passed over in silence without any loss to you or prejudice to me, for certainly you could derive little profit from hearing the statements of my opponents, and I but slight credit from their refutation ; suffice it then to say, that the prescriptions filed by the apothecaries of Dublin establish my claims, for you will search in vain among them for one, bearing a date prior to the publication of my papers on the use of tartar emetic and opium *in the advanced stages of fever*, and in which these medicines are prescribed in the way, or in anything like the way, recommended and practised by me. Since that date such prescriptions have daily become more numerous, and I am proud to bear testimony to the general liberality of the profession, for the greater number of my brethren have not merely tried my plan of treatment, but have acknowledged its utility, and have hastened to assure me that until my publications they had not seen it practised. But enough of this, let us not employ in general encomiums that time which may be more profitably dedicated to instructive details ; let us therefore again recur to facts.

I have within the last fortnight received from Mr. Burke and Dr. Beauchamp the notes of an extremely interesting case of this description. Mr. Burke is remarkable for his professional ability and his attention to his patients, and of Dr. Beauchamp I may state, that his experience in fever is most extensive. The case is extremely valuable as having been observed by Mr. Burke from the

\* He recovered rapidly and completely.

commencement; I shall read the whole of it from his letter, as it is well worthy of attention:—

“ I was called on the 25th of November to see Mrs. M., a married woman, without family, of a weakly and nervous habit, though generally enjoying good health. She complained of having had chilliness on the preceding day; and now, that she was hot, thirsty, had pain in the head and back, and great debility. On examination I found that petechiæ covered the chest and abdomen; the eyes suffused; face red; scalp hot; pulse 110, small and hard; tongue covered with a creamy exudation; no abdominal or chest affection; secretions and excretions arrested. She was ordered some aperient medicine, and directed to be kept very quiet.

“ 26th. — Passed rather an uneasy night, frequent startings; some raving; complains of headache, and that the light and noise are distressing; pulse as before, face more flushed, bowels open. I directed a cooling lotion for the head, and a diaphoretic mixture containing liquor acetatis ammoniæ and nitre. On the 27th, she complained of the headache being made worse by the noise in the house, from which I determined to have her removed, and I therefore did not put any active treatment into requisition.

“ 30th. — This day she was removed to a quiet airy room. I then had her head shaved, eight leeches applied behind the ears, and a blister to the nape of the neck; bowels opened by enemata.

“ Up to the 5th of December, which was the tenth day of her illness, she went on tolerably well, occasionally raving at night; tongue dry and red; pulse very weak, 110; eyes much suffused; face occasionally flushed, then pale; scalp hot. At this period Dr. Beauchamp saw her, and from the weakly habit of the patient, and the peculiar tremulous feel of the pulse, he thought it advisable to let her have some weak chicken broth and light negus: the latter had soon to be discontinued on account of the excitement it produced.

“ On the 14th day she became more delirious and somewhat unmanageable, though previously very gentle; however, when spoken to she answered tolerably reasonably. Ordered to continue the lotion, enemata, and saline draughts.

“ Dr. Beauchamp and I saw her next day about ten o'clock in the forenoon, being the fifteenth day of her fever. Previous to our going into the room, the nurse gave us a frightful picture of the way she spent the night. She had been perfectly unmanageable, continually screaming and imagining she saw frightful apparitions, and had been convulsed during the night. On entering the room, we found her with her hands outstretched and rigid: a mixture of wildness and terror in her face, her eyes red and protruded, pupils contracted, pulse not to be counted, and scarcely to be felt; feet cold and stiff. When spoken to she made no answer, but kept her eyes steadily directed towards the foot of the bed. Her aspect was altogether frightful, and Dr. Beauchamp observed that her state appeared to be a combination of delirium with hysteria.

" The question now was, what were we to do ? we dared not apply leeches, blisters would be doubtful, and the probability was that the patient would sink before they vesicated. There was no indication for cold to the head, for the scalp was cool. Could we rely with safety on nervous medicines ? their very stimulus might hasten her to the tomb. The indication was to relieve the brain, and the question was, what medicine or combination of medicines would effect this safely ? Under these circumstances, we happily thought of the treatment employed by you in somewhat similar cases. We immediately ordered a mixture containing three grains of tartar emetic, half a drachm of laudanum, and six ounces of water : of this a tablespoonful was administered every half hour, its effects being watched. We saw her again at one o'clock on the same day, and had the pleasure of finding her much improved. She had taken three doses, and vomited twice. The expression of her countenance was much changed, it had lost its ferocity and wildness ; her tongue was now moist, perspiration was beginning to appear over the body, the pulse was soft and about 100, and the intelligence, which had been absent for a considerable period, now reappeared. She was able to answer our questions, and expressed herself relieved. We ordered the medicine to be continued, giving a tablespoonful every hour. After taking two doses, she became perfectly quiet, fell into a profound and tranquil sleep, perspired copiously, and at our visit next morning at ten o'clock, we found her to our astonishment almost well. She looked cheerful and refreshed, and spoke of the wonderful relief she obtained : her pulse was soft, and about 80 ; her skin natural, her tongue moist and clean. Dr. Beauchamp did not think it necessary to continue his visits, and all that remained for me was to conduct her by proper regimen from convalescence to perfect health. She is now quite well.

" It is a source of gratification to me to have had the able assistance of Dr. Beauchamp on this occasion, and his presence during the eventful period adds much value to the case. Dr. B. remarked at the time when hope had fled, that he knew of no routine of practice which afforded a probability of being of service, so that we may fairly conclude, that but for your happy combination the patient must have died."

This is a very strong case, indeed there could scarcely be a more striking illustration of the value of tartar emetic and opium in the treatment of the cerebral symptoms of fever. The case too was one of great danger, the patient was of a nervous and weakly habit, and during the acmé of the disease she had an attack of convulsions. This is a very important and most formidable symptom in fever, particularly when superadded to others indicating a deranged state of the sensorium. We had a patient here, some time back, who had two convulsive paroxysms during the course of his fever, and you recollect that I told you that it was a symptom of unusual danger. Some time ago a gentleman, in discussing my cases, said

that convulsions in fever were not so dangerous, but I had the satisfaction of quoting for him the authority of Hippocrates, to show that persons who have been attacked in this way very seldom recovered.

I shall conclude this lecture by detailing a very remarkable case, which has been communicated to me very recently in a letter from Mr. Swift :—

“ J. Kinsela, a labourer, aged 23, of powerful make and robust constitution, was attacked with fever about the 14th or 15th of January. He complained during the ensuing week of intense headache, thirst, and debility, but had no medical treatment. On Saturday, the 21st, he was extremely ill and restless, and on Sunday morning, while his clergyman and several of his friends were with him, he got out of bed in a state of furious delirium, seized a knife, and having cleared the room, rushed out into the street in his shirt, where he was secured by a policeman and some of his neighbours, and brought back to bed, having previously wounded several of his captors in the struggle. He then fell into a state of coma, and when I saw him on the following Thursday, the 26th, he exhibited the following symptoms :— Decubitus on the back ; eyes nearly closed ; lips red, dry, and chapped ; forearms bent and agitated by apparently unconscious movements ; convulsive twitches of the eyebrows and angles of the mouth ; breathing irregular, heavy, and somewhat stertorous, (of that description which you have aptly termed *cerebral*) ; pulse oppressed, unequal, weak, and about 110 ; great heat of scalp and face ; temperature of the body normal ; feet very cold. He had no pulmonary symptoms ; his belly was soft and apparently natural, but he gave indications of uneasiness when firm pressure was made over the situation of the stomach and small intestine. He was raised up in bed, shaken roughly, and spoken to repeatedly, but gave no answer ; nor would he put out his tongue, or open his eyes, when requested. His tongue, as far as I could see it, appeared red, dry, crusted, and fissured ; and on raising his eyelids, I found the eyes greatly suffused, and the pupils contracted nearly to the size of a pin's head. ~~X~~

“ His face, hands, and head, were bathed with warm vinegar and water, jars filled with hot water applied to his feet, and about two o'clock, P.M., he commenced taking tartar emetic in doses of a quarter of a grain every hour. It was combined with a small quantity of opium.

“ When I saw him again, about nine o'clock in the evening, he was wonderfully improved. He could be easily roused, answered questions distinctly, put out his tongue when desired, and appeared quite rational. He had taken about two grains of the tartar emetic, the effects of which appeared to be chiefly confined to the circulating system. His pulse was now equal and regular, the temperature of his body nearly uniform, and a slight degree of moisture could be felt on his skin, but he was neither vomited nor purged. A

*in Brux. Petros: 1. 43. 1244 - p. 30. p. 35.*

mixture, containing nitrate of potash and tincture of hyoscyamus, was substituted for the tartar emetic; the fomentations of warm water and vinegar were continued, and he had a purgative enema with turpentine, which was followed by a full discharge from the bowels and copious diuresis. On Saturday, the 28th, he had an indistinct but favourable crisis; his tongue became clean and soft, and his pulse diminished in frequency. On the following Tuesday, his pulse was 76, his tongue clean, eyes clear, pupils natural, appetite returning, so that I considered it unnecessary to continue my visits beyond the following day. His convalescence is now completely established.

"I have been particular in describing the cerebral symptoms in this case, as the patient's head was neither shaved, blistered, nor leeched. A portion of his hair was cut off with a scissors, and this was all that was done in addition to what I have mentioned. I attribute his recovery to the tartar emetic and opium, as under its use he recovered in a few hours from a state of stupor and coma, which otherwise must have speedily terminated in death, and I think this valuable remedy has additional claims to notice, if (as it would appear from Kinsela's case) it can be employed as a substitute for all the ordinary and expensive remedies used on such occasions, — remedies, which in dispensary practice, and among a pauper population like ours, it is often difficult, and sometimes impossible, to procure."

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## LECTURE XVII.

Supervention of other diseases on fever — Description of a peculiar form of low neuralgic inflammation, not identical with phlebitis — Local affections with morbid poison producing cutaneous eruption — Vesicles of Colles.

THERE is one fact connected with the history of fever, which should never be forgotten by those who are occupied in its treatment: I allude here to the occurrence of sudden accidents, or the supervention of other diseases, producing a material alteration in the circumstances of the case, and leading to new and more alarming dangers. You should not divest yourselves of all further anxiety for the patient, or relax in your attentions, because the fever has exhibited a tendency to decline, and a favourable crisis has taken place: crisis may occur, and convalescence may be established, and yet the patient may relapse, or he may be struck down again by the unexpected incursion of a new and dangerous malady, or he may expire suddenly in the course of a few minutes. The functions of the brain and heart may suddenly give way, and death may take place unexpectedly and at once. Thus it not unfrequently happens that a patient during his convalescence falls into

a state of syncope, from remaining too long in the erect posture, and if assistance be not promptly afforded, life is speedily extinguished. In the state of debility which follows acute and exhausting diseases, and where the patient is very liable to syncope, the most assiduous attention is required. During the epidemic of 1826, death took place under such circumstances in five or six instances, and the convalescents lost their lives from incautiously sitting up or walking about the room too long, or attempting to reach the night-chair without assistance. There are many other causes capable of producing a sudden and alarming change in the state of convalescents from fever. One of the most obvious of these is error or excess in diet, which is apt to bring on a return of the fever in an aggravated form, accompanied by symptoms of gastro-enteric inflammation, and sometimes terminating fatally in forty-eight hours.

To-day I propose to lay before you a sketch of a very important form of disease which attacks convalescents from fever, and runs a course of remarkable intensity and rapidity. I am not aware that this form of disease has been described by pathological writers; the nearest approach to a description of it is an account of the swelled leg which occurs after fever, given by a Glasgow physician. Dr. Stokes and I have given a description of a swelled leg after fever, as observed during the epidemic of 1826, but the important and fatal form of the disease which I am about to describe, did not come under my notice until within a very recent period.

Before the commencement of the present session, a fine young woman, aged 24, previously healthy and robust, was admitted into our fever ward. She was admitted on the 26th of September, having been at that time eight days ill, and labouring chiefly under gastric and cerebral symptoms. Her treatment consisted in the application of leeches to the epigastrium and head, cooling drinks, and blue pill combined with James's powder. Under the use of these and other appropriate remedies, the fever declined, and on the 1st of October the cerebral and gastric symptoms had disappeared, and the patient complained merely of a slight degree of feverishness. On the 2d of October she was seized with rigors and horripilation, followed by intense pain of the left mamma, accompanied by numbness and loss of power of the corresponding arm. She was leeched with some relief, but passed a sleepless night, and next day an oblong patch of redness was seen extending upwards from the nipple; the pain was still violent, and she could not bear the slightest touch on the affected parts. The breast was leeched again, and fomented assiduously during the day. On the 4th the erysipelas was spreading, and the pain was still agonising. She screamed out whenever it was touched, and could not bear even the weight of her dress or covering. On examining the breast, no enlargement or hardness could be observed; there was no remarkable heat or tension, and with the exception of a slight erysipelatous redness, and pain rivalling that of *tic douloureux* in severity, there was

nothing to indicate the presence of disease. The left arm continued numb and powerless. This state of things was accompanied by remarkable increase of fever, as manifested by foul tongue, accelerated pulse, and sleepless nights. She now began to complain of dull pain in the calf of the right leg, aggravated by pressure or motion, but not attended by any apparent increase of heat, swelling, or induration. On the 5th she is reported to have passed a sleepless night, although the watery extract of opium had been administered freely on the preceding day and evening; the erysipelatous redness had extended nearly as high as the clavicle, and the affected parts had now begun to swell considerably. On the 6th she is stated to have had some sleep, and the erysipelas was extending, in some parts covered with vesicles. She again complained of cramps in the right leg, and on making an examination we found considerable tenderness on making deep pressure, but no external indication of disease. Her debility was increasing, accompanied by a tendency to looseness of bowels, for which she was ordered enamata of sulphate of quinine and laudanum. On the following night she was attacked with intense pain in the leg, accompanied by exquisite tenderness to the touch, but no redness, swelling, or increase of temperature. The erysipelatous affection of the breast had now become pale, and ceased to spread. The enamata were continued, the parts dressed with mercurial ointment and extract of belladonna, and wine freely allowed. She passed the night in great agony from the intense pain in the leg, and complained of frequently recurring rigors followed by perspirations. She also stated that for the last two or three days she had experienced repeated attacks of tremor in the affected limb; one of these tremors attacked the limb on the night of the 8th, and continued for three or four hours, terminating in copious general perspiration. These increased on the following day, attended with increase of fever, thirst, and debility, and the pain in the leg continued with unabated violence. It is worthy of remark, that at this time there was no erysipelatous redness or discoloration of the affected limb, and scarcely any swelling. On the 9th, she is reported to have passed the night screaming and sleepless, she vomited three or four times, complained of intense pain in the abdomen, and had a violent rigor which continued from one o'clock to six in the morning, followed by profuse perspiration. The right leg continued exquisitely painful as before, became somewhat swollen, and its veins appeared more prominent than natural, but there was no discoloration of the integuments. Both arms were now painful on motion, and the left leg became painful and tender on pressure. Under this complication she sank rapidly, and died at three o'clock in the afternoon.

On dissection, purulent matter was found under the integuments covering the left breast, but the gland itself appeared healthy. There was no vascular supply or other traces of peritoneal inflammation, and the abdominal viscera were healthy. The right leg was

infiltrated ; its veins were pervious and elastic, but their internal coat exhibited a rose-coloured tinge.

Here, then, we have a very remarkable and formidable train of symptoms, arising without any obvious cause, running a rapid and fatal course, and exhibiting a character of singular intractability. From all that we had previously seen or heard, this young woman's constitution was robust and healthy, her fever had been treated successfully, and she appeared to be getting over it without any sinister accident, or any complication capable of disturbing her convalescence ; yet at this period she is attacked with fever of a new type, accompanied by local affections of the breast and extremities, which run a rapidly fatal course, and exhibit phenomena of a new and extraordinary character. She is first attacked with erysipelas of the left mamma, accompanied by pain and loss of power of the corresponding arm ; then she gets exquisite pain of the right leg, and then of the left leg and right arm ; in fact the whole four extremities are more or less implicated. Now by what name should we designate this affection, or what would be the most appropriate term to apply to it ? Was it phlebitis, or erysipelas, or phlegmasia dolens ? The affection of the mamma certainly resembled erysipelas, but differed from it in the agonising character of the pain, and I have already observed that in the legs or arms there was no appearance of redness or discolouration. That it was pure phlebitis I think we are not authorised in concluding, from the phenomena observed on dissection. There was no pus in the veins (an occurrence which might naturally be expected from the acute character of the disease,) no thickening or induration, the coats of the veins were elastic, and to all appearance healthy, with the exception of a rose-coloured tinge. Now considering the previous state of the woman's system, I do not think that we can conclude as to the existence of pure phlebitis on such slight grounds, or say that the whole group of symptoms which characterised the secondary attack depended solely on inflammation of the veins. The disease of which I speak simulated in many points phlegmasia dolens, but differed from it in the phenomena observed in the breast, as well as its more general diffusion, and the absence of that peculiar whiteness of the affected limb which characterises the latter affection. It appears to be a form of disease resulting from the generation of a morbid poison in the system, and manifesting itself in diffuse subcutaneous inflammation of a low and cachectic nature, affecting primarily the skin and subcutaneous cellular tissue, and afterwards involving all the subjacent parts more or less according to their different susceptibilities. It was accompanied from the commencement with increased irritability of the muscular and cutaneous nerves ; indeed, in the case just detailed, the nerves appear to be the parts primarily affected. Another remarkable circumstance connected with this case is the loss of power, observed in the affected limbs. In all cases where a severe and painful affection of the nerves is present, you have more or less loss of power, but as

far as my observation has gone, there appears to be a difference in the derangement of muscular motion connected with painful affections of large nervous trunks, and that which accompanies an affection of the terminating fibrils or nervous extremities. In the latter case the degree of paralysis is always more considerable; of this phlegmasia dolens affords a good illustration. In this disease the extremities of the nerves are chiefly affected, and the loss of power is always greater than when a large nervous trunk is affected, as for instance in sciatica. In the latter affection the pain is often extremely violent, but the motion of the limb is never so much impeded as it is when the nervous extremities are the parts chiefly engaged.

You perceive, then, that the affection which I have just described consists in the development of low, malignant, and irregular inflammatory affections in various parts of the body, but particularly in the extremities, commencing probably in the subcutaneous cellular tissue, but subsequently extending to all the neighbouring parts, and exhibiting many of the characters of those inflammations which result from the presence of an animal poison in the system. A peculiar feature of this affection, also, is the intense neuralgic pain which accompanied it, and I think it might with some propriety be designated as neuralgic diffuse inflammation after fever. It is accompanied by a fever of a peculiar type, ushered in by rigors, and characterised by remarkable derangement of the digestive canal, debility, and sleeplessness. A point also which deserves notice in this case was, the recurrent rigors and perspirations, marking the occurrence of new and additional mischief, and indicating the malignant and intractable nature of the disease.

One word as to the connection of this disease with phlebitis. Some pathologists are of opinion that phlegmasia dolens and swelled leg after fever are nothing more than modifications of phlebitis. I cannot, I must confess, agree with this opinion, nor am I prepared to admit that the symptoms in the foregoing case were referable to mere inflammation of the veins. I do not deny that the veins may be affected, but phlebitis is not the first link in the morbid chain, and is itself merely a consequence of the same unknown cause which determined the inflammation of other tissues. I beg leave to observe here, that the affection I have just described seems like others capable of existing in very different degrees. Thus, I have seen some instances in which there was no other symptom but severe pain of the extremities, generally about the calves of the legs, and which was relieved by warm fomentations and mild aperients. Again, I have seen, in addition to this symptom, swelling and tenderness of the legs, which, however, generally yielded to leeching and other appropriate means. Probably we are authorised from this and other facts in concluding, that the disease is not always of a malignant and fatal character, and that there are at least certain forms of it amenable even to simple and ordinary treatment: you should, however, be always on your guard when

patients recovering from fever are attacked with pain, in the lower extremities particularly, as this symptom not unfrequently ushers in a serious and alarming disease.

The next case of this disease observed in our wards, occurred also in a young woman, named Dillon, aged 23, and apparently of good constitution. She was admitted into the fever ward on the 2d of September, being at that time about seven or eight days ill. She had on admission the usual symptoms of fever, accompanied by intense bronchitis, dyspnoea, costiveness, and loss of sleep. Under the use of cupping, blisters, calomel, and other appropriate means, the fever and pulmonary symptoms declined, and she was pronounced convalescent on the 12th. On the 18th she had been up as usual, but towards evening complained of rigors, and said she felt her right leg very painful. The pain of the limb continued next day, intermittent during the following night, but returned on the morning of the 20th with increased violence. She was leeched without much relief, and on the 21st she is reported to be extremely feverish, her pulse frequent, her tongue foul, bowels loose. She had passed a bad night, and the leg was still exquisitely painful and somewhat swollen. She had twelve leeches again applied with some relief, but on the 22d the left shoulder became similarly affected with pain, and so tender as not to admit of the slightest pressure. On the 23d there was some diminution of pain in the leg and shoulder, but her pulse was jerking and unequal; her tongue parched; her countenance anxious; and she complained of intense pain in the small of the back. She passed a sleepless night, and next day complained of exquisite pain in the left lower extremity. This was accompanied by an exacerbation of the febrile symptoms; she moaned constantly; her pulse became excessively feeble and rapid; and she died on the 24th.

On dissection, the peritoneum, particularly that portion of it attached to the abdominal parietes, was found remarkably vascular, the vascularity being most intense over the hypogastric region. There was no effusion of lymph or serum, but about half an ounce of purulent fluid was discovered in the cavity of the pelvis. The viscera were healthy. The internal surface of the principal venous trunks were tinged red, and there was a small quantity of coagulated blood in their cavities. On making an incision into the right leg, along the course of the internal saphena, the subcutaneous cellular membrane was found infiltrated with sero-sanguineous fluid; the texture of the veins was here apparently natural, their cavity pervious and filled with fluid blood, without any lymphy or purulent admixture. No distension or enlargement of the lymphatics was observed.

Here you have a case corresponding in its main points with the former, and differing from it chiefly in being complicated with peritoneal inflammation and synovitis of the shoulder-joint. Its origin was similar; it exhibited the same kind of intense neuralgic pain; the same fever; the same extensive diffusion of local inflam-

mation, and the same unfavourable termination. The chief points of difference were, that in the latter case the disease attacked the synovial membrane of the shoulder-joint, and the serous membrane of the abdominal cavity. This, however, is by no means unusual. As to the synovitis, I have observed it in more than one instance after fever. I have witnessed a very remarkable instance of it in a man in this hospital who was attacked with swelled leg after fever. In addition to the affection of the leg, he had also synovitis of the knee-joint of so severe and intractable a character that he recovered with difficulty, with an ankylosed state of the joints. On the whole, the disease which we have been considering is one of great importance, and deserves particular attention. It is sometimes of a very unmanageable character, and baffles our best directed efforts. The treatment which appears best adapted for it consists in leeching, fomentations, and the application of mercurial ointment with extract of belladonna to the affected parts: these, combined with the internal use of quinine and opium, with occasional doses of calomel, seem to comprise the chief remedies on which we can place any reliance.

Bearing some analogy to the foregoing, and requiring somewhat similar treatment, is another class of cases, in which, after some slight injury, and sometimes without any apparent cause, persons are attacked with local affections, attended by fever, remarkable sleeplessness, and an eruption of those pustules which were first described by Mr. Colles, and of which I have said something in a former lecture.\* I shall read here for you the notes of an interesting case of this description which came recently under the notice of Mr. Trenor, a gentleman distinguished for the accuracy of his observation.

A lady, aged about thirty, of dark hair and pale complexion, was visited by Mr. Trenor in October, being at that time three days ill. She had suffered some time previously from a cutaneous affection of the hands, which, from the appearance of the skin and the description given by the patient, was supposed to be psoriasis. Three or four days before her illness she had pricked her finger with a needle, but did not pay any attention to it, as a similar accident had often happened before without any consequent inconvenience. On examination, three pustules or rather vesicles of different sizes were found on the inside of the finger and wrist, and there was an indistinct blush on the inside of the arm, which, however, the patient thought to be caused merely by the weight of the limb, as she lay on her side. The fore-arm was intensely painful, and the slightest touch excited extreme agony. The arm was also tender, and in the axilla was a small hard tumour, exquisitely tender to the touch, and from which the pain shot inwards over the anterior and upper part of the chest. The affected arm was powerless, and very painful on motion. Her pulse was 100; tongue white and

\* See Lecture viii. of this series.

moist ; bowels opened by medicine ; skin not differing much from the normal temperature ; but she was extremely restless, and had not slept for the last two nights. She was ordered to take three grains of calomel and two of the watery extract of opium at bed-time, and an aperient draught the following morning : the tumour in the axilla was carefully poulticed. On the following day the pain of the limb continued, but she had rested much better. The tumour in the axilla was stationary. The calomel and opium were repeated in the same quantity night and morning, and she took a quinine mixture every third hour. Next day she appeared much easier, and under the same treatment, combined with occasional purgatives, she improved rapidly, and in the course of four or five days required no further treatment, except an opiate at bed-time, and the quinine mixture, which was continued for some time longer. The painful tumour of the axilla gradually disappeared of itself, for the local applications were given up at an early stage of the disease, being more inconvenient than serviceable.

Here, you perceive, a train of severe constitutional and local symptoms arises from an apparently trivial injury, and the patient is attacked with fever, sleeplessness, and exquisite pain of the affected limb, accompanied by a slight blush of erysipelatous redness. There was also the same loss of muscular power which we observed in the cases of swelled leg after fever, showing that the extremities of the muscular as well as the cutaneous nerves were engaged. Now in this instance my friend took the same view of the case as I did in a somewhat similar one which I am about to detail. He looked upon the irritative fever, the sleeplessness, the agonising pain, and the pustules, as symptoms not to be treated by bleeding, or leeches, or cold applications, or tartar emetic and nitre, but by tonics, opiates, and a mild nutritious diet. He gave calomel or blue pill, with full doses of opium and quinine, and ordered her to take chicken-broth and beef-tea. During the course of four days she took fifteen grains of opium without any affection of the head or derangement of the stomach, and nine grains of calomel and a drachm of blue pill in the same period without any appearance of salivation. I have no doubt that in this instance the free use of opium tended not only to produce sleep and to relieve pain, but also to diminish the constitutional irritation on which the eruption of pustules seemed to depend.

The next case of this affection deserving of notice is that of a French sailor boy admitted into Sir P. Dun's Hospital, labouring under a violent and dangerous form of fever, apparently typhous, but wanting the usual eruption of maculæ. His pulse was but little accelerated at first, but he was very weak, restless and sleepless, and complained of exquisite pain in the side of the neck extending over the whole surface of the right ride from the angle of the jaw to the tip of the shoulder. This region was very tender, and exhibited a diffused swelling and fulness with very slight redness, the latter only visible towards the centre. There was pain in the

axilla, with incipient inflammation of one or two glands, and the right side of the chest, though neither red nor swollen, was very painful on pressure. Immediately after detecting the existence of this diffuse inflammation, I remarked to the pupils that this was a case likely to favour the development of Colles's pustules, and accordingly I examined his skin and found two vesicles each as large as a shilling on the fingers of the right hand; one of these vesicles was formed round a light superficial wound on the knuckle of the middle finger. Here it was not easy to determine whether the diffuse inflammation of the neck was a consequence of the wound on the knuckle, or whether the former arising spontaneously had generated in the system a morbid poison which had reacted on the integuments around the wound, and formed a vesicle surrounding it. I am inclined to adopt this latter opinion, for I have seen more than one similar case proving that where a poison is at work producing a tendency to cutaneous eruption, the existence of a small wound in the skin generally determines the morbid action towards that point of the surface, and causes, when any of Colles's vesicles are formed, the formation of one around the wounded spot. Thus in a grocer, ill of typhus, whom I lately visited along with Mr. Bourke, of Camden Street, one of these vesicles formed round a sore on his knuckle inflicted by a sharp scoop prior to the commencement of the spotted fever. Here the fever evidently engendered the poison, while the wound determined its action on the skin to a particular place: the same is observed in psoriasis, in venereal cachexy, and in small-pox. While the constitution labours under any of these diseases, injuries of the skin frequently call forth the specific cutaneous affection in the injured part.

But to return to the case of the French sailor.—At first the diffuse inflammation of the neck was not accompanied by much fever, but in a few days suppurative fever set in, and a circumscribed swelling was observable in the centre of the inflamed part. After a short time this was opened by Mr. Houston, and a large quantity of pus evacuated; some improvement in his general health took place, and the peculiar distress produced by the diffuse inflammation in the neck, arm, and side, subsided; the agonising tenderness had gone, and he seemed to be fast improving notwithstanding the profuse discharge of matter from the opened abscess, when suddenly he got acute hectic fever, rapid emaciation, and a sunken countenance, with cough and shortness of breath; a moist crepitus was now discovered in the upper lobe of the right lung, just below the seat of the abscess. The case now assumed a most hopeless appearance, for in the exhausted state of our patient we had but slender hopes of his recovering from this pneumonia. The question occurred, what caused the pneumonia? Did it arise from a communication between the abscess at the lower part of the neck and the upper lobe of the lung, or was it phthisis rapidly developed in a constitution run down by previous illness, or was it simple and self-existent pneumonia? These are questions which it was

not very easy to determine, and yet how important was the determination with reference to prognosis. If the pulmonary affection depended on an extension of the inflammation from the neck to the upper part of the lung, there was a chance of recovery, but if it were phthisis, the boy was lost. I declared to the class my conviction that it was phthisis, and for a few days the boy seemed hurrying to the grave, when suddenly the abscess in the neck dried up and became consolidated, and at the very same time the pneumonia in the lung just below the abscess disappeared as rapidly as it had arisen! All fever subsided, and the boy, getting rid of his pectoral affection, was at once out of danger. I cannot explain the remarkable and unhoped-for termination of this affection, except on the supposition, that the moist crepitus in the lung, and the pectoral symptoms, originated in a suppurative inflammation, suddenly extended from the lower part of the neck to the contiguous portion of the lung, and as suddenly ceasing when the abscess healed. I have dwelt on the particulars of this curious case, as I have neither seen nor read of anything similar.

An old man from Bray, admitted into the clinical ward of Sir P. Dun's Hospital, exhibited extensive gangrenous erysipelas on the inside of the right knee and thigh, caused by a moxa, applied for the cure of pain in the knee. In a few days patches of diffuse inflammation, ending, some in sloughing, and some in suppuration, appeared on his hand, and other distant parts, and several of Colles's vesicles developed themselves on his trunk. Shortly after, another man, young and athletic, who had been bled for pneumonia, and in whom the wound in the vein had caused ill-conditioned diffuse inflammation at the bend of the arm, was admitted under my care. In him, too, Colles's vesicles formed in various parts. To conclude, you may gather from the numerous examples we have witnessed, that these vesicles or pustules constitute a peculiar feature accompanying many varieties of disease, which agree but in one circumstance, the formation of a cutaneous eruption, caused by the operation of a morbid poison, generated in some cases in the system itself, in others introduced from extraneous sources. Among the most frequent causes that give rise to the evolution of this poison in the system, is diffuse inflammation, no matter how produced — whether by a bruise, a burn, a punctured wound, a bed-sore, or the poison of glanders. In fine, you may remark that the cutaneous affection thus caused bears some analogy to exanthematous diseases of a malignant character, and marks a state of the system requiring wine, opium, and quinine. In most instances the eruption is either pustular or vesicular, but in some it assumes the appearance of small patches of diffuse inflammation, or of ill-conditioned furuncles.

## LECTURE XVIII.

Dropsy following scarlatina; utility of bleeding — Albuminous urine not necessarily the result of diseased kidney — Pulmonary affection after fever; smilax aspera — Phlegmasia dolens not dependent on phlebitis; treatment — Case of metritis — Melæna; various kinds of black discharge from the bowels; green stools not always a sign of deranged liver.

THE case of William Young, who was admitted on Wednesday last, has some claims to your attention, and demands a few observations on my part. This boy, who is about twelve years of age, had an attack of scarlatina some time ago, and had been dropsical for a week or ten days at the period of his admission. He was somewhat feverish, had thirst, heat of skin, and slight headache, cough and difficulty of breathing, and on making an examination with the stethoscope, we detected numerous bronchial râles; his lower extremities were anasarca, and he had some effusion into the peritoneal sac. We could not ascertain exactly the time when this train of symptoms commenced, but it is very probable that it was a week or ten days after the disappearance of scarlatina. When patients who have been recently labouring under an attack of scarlatina take cold, the anasarca symptoms appear in a very short time after the attack; but even where they are not exposed to cold, the dropsy appears generally about ten days or a fortnight after scarlatina, and is very often accompanied by some pectoral affection. The disease sets in with febrile exacerbations more or less marked; anasarca of the extremities is next noticed, and at the same time the patient has slight cough and difficulty of breathing, which generally proceeds from congestion of the bronchial mucous membrane, but may be the result (though less frequent) of pleuritis or pneumonia.

If called to a case of this kind in the commencement, and where the patient is not greatly exhausted by previous disease, the treatment is exceedingly simple. By opening a vein in the arm, and abstracting a quantity of blood proportioned to the age and strength of the patient, you remove the inflammatory state of the constitution, and arrest at once the anasarca and pectoral symptoms. It may occasionally happen that active measures of this kind cannot be taken in consequence of the great debility of the patient from previous disease; but generally speaking, cases of anasarca after scarlatina bear antiphlogistic treatment well. It is not after cases of violent scarlatina, or where the patient's life has been in imminent danger, that the supervention of dropsy is most commonly observed; the majority of dropsical cases of this kind are met with in patients who have had the disease mildly, and without any remarkable intensity either of the local or general symptoms. Hence, venesection is borne well, and its performance attended by the most decided

good effects, particularly where the dropsy is complicated with pleuritis or pneumonia.

In the case before us, however, being uncertain as to the exact duration of the disease, and finding several symptoms present indicative of weakness, we were obliged to proceed with more caution. The boy had been ill a week, and appeared to be under the influence of digitalis administered before his admission, for his pulse was intermittent and wavering. Under these circumstances I determined to limit the antiphlogistic measures to the application of a few leeches over the abdomen. I did this with less hesitation, as an accurate examination of the chest showed that there was neither pleuritis nor pneumonia present. The internal remedies were calculated to increase the secretion from the kidneys. The boy's urine was remarkably albuminous, and of the specific gravity of 1027. This is a point worthy of remark. In many cases of dropsy after scarlatina, the urine is albuminous. Now, almost every case of this kind will get well, and as convalescence progresses, you will observe that the urine ceases to be albuminous. These facts, of the truth of which I can speak with the fullest confidence, are quite sufficient to show that those persons are wrong who assert that albuminous urine is the result of organic disease of the kidneys. Albuminous urine is here, as Dr. Blackall observes, merely an indication of a peculiar inflammatory condition of the whole system, and not of degeneration of the kidneys. I may observe, however, that this is not always the case; for I could point out examples where albuminous urine is connected with an apparently opposite condition of the system; in fact, a condition demanding the use of a generous diet and tonics. Hence, there must be great diversity in the treatment of dropsy with albuminous urine. Where it occurs after scarlatina, and is accompanied by febrile symptoms, it is best treated by the lancet, nitre, purgatives, and digitalis; but where it occurs in chronic cases, without any remarkable excitement of the vascular system, without organic disease, and with more or less debility, it requires to be treated with tonics, generous diet, and full doses of opium. In the present case I only applied a few leeches to the belly, and kept the bowels gently open for the first few days, being determined to wait until the pulse became regular before I ventured on any decided plan of treatment. I then ordered mercurial frictions to the abdomen and axillæ, and gave mercury internally combined with small quantities of digitalis. He also got a draught twice a day composed of carbonate soda, tincture of squill, and syrup of orange peel. These remedies we shall continue for some time, carefully watching their effects.

From the state of weakness this boy was in at the period of his admission, and the length of time the disease has lasted, I have not thought it advisable to bleed him.\* When cases of this kind be-

\* This case went on unfavourably, and the boy died, after lingering several weeks, in a state of extreme dropsical swelling and great suffering, distension, and dyspnoea. As his urine continued highly albuminous throughout, we were

come chronic, they are very difficult of cure, and require very delicate management. You will frequently have to run through the whole list of remedies employed on such occasions before you can hit on one that proves successful. I recollect a case of this kind, in which the anasarca was extreme, and the boy's legs were enormously swollen; the dropsy was accompanied by scanty secretion of urine, but without any distinct febrile excitement. After having used every remedy I could think of, for nearly three months, without any benefit, I resolved to try the effects of cold effusion, from which I had experienced much advantage some time previously in another case. I ordered a large vessel filled with pump water, in which a quantity of salt had been dissolved, to be poured over him twice a day, for the space of two or three minutes each time, immediately after which the boy was wiped perfectly dry and put to bed. The good effects of this measure became soon evident; a copious discharge of urine took place, the swelling of the limbs subsided, and in six or seven days the child was able to run about as usual.

Allow me to refer briefly to the case of Garret Kane, of which I have spoken on a former occasion. You are aware that this man, after an attack of fever, had symptoms of tubercular deposition in the upper part of the left lung. From the circumstances, however, of the other lung being perfectly sound, there being no fever or vascular excitement present, and the small extent of the disease, as well as the patient's youth and the season of the year, we were led to hope that we might be able to arrest the morbid process going on in the lung. After freely leeching the chest, we inserted a seton under the clavicle, and gave such remedies as are calculated to relieve cough and pulmonary irritation. We first gave the cyanuret of potash, from which he derived some benefit, but for the last weak we have been giving a dram of the syrup of smilax aspera in an ounce of water, three times a day. This remedy, which has been lately introduced into practice, possesses many of the properties of sarsaparilla, in addition to which it appears to contain a small portion of prussic acid, as denoted by its smell, which closely resembles that of laurel water. It has been very highly spoken of, and I believe it to be an excellent remedy, but, as in all cases of

excessively curious to learn what was the condition of his kidneys. The post-mortem examination was made a few hours after death, and the kidneys were found in every respect healthy; their size, shape, consistence, and colour were perfectly normal. So striking an exception to the general rule ought to shake the confidence of those who assert that albuminous urine results from Bright's kidney. The long-continued presence of albuminous urine, in a case where no such state of kidney existed, forms conclusive evidence that this state of urine is not necessarily the result of that renal degeneration to which it is referred by Dr. Bright; the occurrence of one positive exception is sufficient to disprove such a conclusion, even though supported by a thousand cases, and, consequently, when albuminous urine in chronic dropsy is found to occur along with Bright's kidney, I consider this particular state of urine and of kidney as depending upon different causes, which often co-exist in chronic dropsy, and consequently I regard albuminous urine as a sign of Bright's kidney, but not as its result.

new medicines, I fear its powers are somewhat overrated. That it will fail in some cases I am quite convinced, for in the case of a gentleman in Mount street, whose symptoms were chronic bronchitis, with violent and harassing cough, and who had been blooded, cupped, and used various internal remedies, I gave it a fair trial, and found that it did not produce any alleviation whatever of his symptoms.

Let me now direct your attention to the case of Rebecca Howard, who came into hospital on the first of this month, eight days after her accouchement, with painful swelling of both lower extremities. From the history of her case it appears, that three or four days after her confinement she got severe pain about the heel and inner ankle, accompanied by swelling, which commenced about the same situation, and extended rapidly up the thigh as far as the groin. A similar swelling appeared likewise in the other limb, but instead of commencing below, it appeared first in the upper third of the thigh and afterwards spread downwards, attended with violent pain, apparently in the course of the great sciatic nerve. Along the course of the veins a number of hard cords, extremely tender to the touch, could be distinctly felt; the lymphatics, though somewhat tender also, did not seem to be so much engaged, and there was no inflammation of the glands of the groin.

Here we had a case of phlegmasia dolens, or, in other words, painful inflammatory œdema of the lower extremities, involving the skin, subcutaneous cellular tissue, veins, and lymphatics, more or less distinctly. I have before stated to you my opinion, that this affection does not necessarily depend on phlebitis; on the contrary, I think that in the majority of cases the disease commences in the subcutaneous cellular tissue, and afterwards extends to the veins and lymphatics. Observe the course of the inflammation in both limbs. In one it commences in the vicinity of the inner ankle and extends up the thigh; in the other, it is first observed in the upper part of the thigh, and spreads downwards. Now, where œdema is the consequence of phlebitis, or where it is artificially produced by tying or compressing one of the large venous trunks, it is always first observed in the lower part of the limb. You perceive, then, that those who explain the occurrence of phlegmasia dolens by referring it exclusively to phlebitis, are not able to account for it as commencing in the thigh and spreading downwards. But how much easier is the explanation, if we look upon it as a peculiar inflammation of the subcutaneous cellular membrane of the limb, involving in its progress, to a greater or lesser extent, the veins and lymphatics, and sometimes extending to the joints. From this view of the pathology of phlegmasia dolens, you can understand why the upper part of the thigh may become primarily affected, and that effusion may take place above before it occurs below.

So far with respect to the pathology of the disease: now with regard to treatment. In attempting to remove this inflammation, we were obliged to keep clear of any measures calculated to in-

crease constitutional debility. The woman, though young, was of a delicate constitution; and there is this peculiar difficulty in the treatment of diseases after parturition, that they occur at a time when the patient has been more or less debilitated by the efforts of labour and its consequences. Our object, therefore, was to reduce the local inflammation, at the same time that we endeavoured to support the woman's strength by a light and nutritious, but not heating diet. We commenced with the application of leeches, to the number of ten, along the inside of each limb; these we repeated to the same amount on the following day. In the application of leeches in cases of this kind, you must be guided by the circumstances of pain, tension, and swelling; these are sometimes greater in one portion of the limb than in another, most frequently in the course of the veins; but you should always take care to have them applied over those spots in which the inflammatory process seems to exist in the greatest intensity. Our next step was to open her bowels by means of purgative injections, to be repeated as occasion required. In addition to this, I directed the limb to be gently rubbed with an ointment composed of one ounce of mercurial ointment, two ounces of lard, and three drams of extract of belladonna. I have already dwelt so often on the local, antiphlogistic, and narcotic effects of this composition, that it is unnecessary for me to say anything of it at present.

With respect to internal remedies, I ordered her to take five grains of Plummer's pill every night and morning; but as this produced griping and a tendency to diarrhoea, we were obliged to change it for hydrarg. c. cretâ, with Dover's powder. On the 24th (the fifth day of her treatment) her mouth became affected, and the pain along the sciatic nerve, as well as the general soreness of both extremities, decreased. I forgot to observe, that from the commencement we had given opiates freely; indeed, this was one of the principal parts of our treatment. She first took the liquor of the muriate of morphia, in doses of twenty drops, three times a day: this we exchanged for opiate injections, when her bowels became irritable under the use of Plummer's pill. On the 24th there was a considerable improvement in her symptoms, as I have already stated; but she was very weak; there was still considerable soreness of the extremities, and she complained of pain and tenderness in the right groin, showing that the lymphatics as well as the veins were engaged. I ordered the opiate enema to be repeated, and allowed her the free use of chicken-broth, rice, and a small quantity of wine. On the 25th she was directed to take a pill containing half a grain of opium every third hour. Next day the report states that she finds herself much better, that her bowels are quite natural, that she feels no pain in the lower extremities, except when pressed or moved, and that she had regained the power of her limbs. Two days afterwards she was able to stand, and at present she is so far recovered that I intend to dismiss her to-morrow.

The treatment of cases of this description involves some very

curious and important considerations. With the exception of leeching, the treatment which we employed in this case cannot be called antiphlogistic ; for throughout the whole course of the disease we gave opium freely, allowed her nutritious diet, and after the first four or five days the use of wine. This shows that, in diseases called inflammatory, no general rule of treatment can be laid down, and that our practice must vary in the most remarkable manner, according to circumstances. Had I treated this inflammation by leeching, low diet, purgatives, and antimonials, it is very probable she would have sunk. But while we were endeavouring to subdue local inflammation by leeching and mercurial ointment, we supported the constitution by a proper diet, nourishing but not heating, and afterwards by the use of wine. At the same time we gave opium in free and repeated doses, with the view of diminishing pain and irritation, and procuring sleep—a most important matter in the treatment of all acute affections combined with irritability. We also gave mercury internally, because it has been found extremely valuable in such cases, when given rather as an alterative than with the view of rapidly and violently affecting the system. Under this plan of treatment her convalescence has been very rapid. It is a plan abundantly simple, but one which I can recommend to you with confidence.

With respect to the after-treatment of this case, I have merely to observe, that as soon as the hyper-sensibility of the limbs became diminished, I ordered them to be rubbed diligently twice a day with warm olive oil. How this acts I cannot distinctly say ; but it appears to diminish tension, to promote absorption, and to increase the pliability of the limbs. Latterly, we have given up this, and had recourse to dry friction and bandages. At present she is taking, three times a day, a mild tonic draught, composed of tincture of orange peel, half a dram ; tincture of hops, twenty minims ; carbonate of soda, five grains ; water, an ounce.

Let me next turn your attention to the case of Esther Green, who was also admitted here shortly after her confinement. I may observe that our proximity to the Lying-in Hospital in Cumberland street, under the care of Dr. Beatty, assisted by Dr. Montgomery, gives us an opportunity of witnessing many cases of female complaints. This woman was delivered on the 5th of March, and dismissed about six days afterwards, apparently well. On the 29th, after having previously taken cold, she got symptoms of fever, accompanied by pain of the belly, chiefly affecting her in the hypogastric and right iliac regions. When she came in on the 31st, there was very little fever present, her pulse was slow and regular, and her skin cool ; but she was pale and anxious, had general tenderness of belly, with gripping diarrhoea and nausea, and complained still of considerable tenderness on pressure over the region of the uterus. Having consulted with Dr. Montgomery, we ascertained that the uterus was enlarged and painful. The case, then, was one of metritis, but not of a very acute character, and which had pro-

duced by sympathy a disturbance in the functions of the stomach and intestinal canal.

Eight leeches were applied over the region of the uterus, to be repeated daily, until the pain and tenderness were relieved. We next had recourse to the use of mercury; but as her bowels were in an irritable state, we prescribed the mildest of the mercurial preparations, hydrarg. c. cretâ, and to this we added Dover's powder. Two scruples of the former to ten grains of the latter were divided into twelve pills, two to be taken every fourth hour. This combination is extremely valuable in many cases of inflammation of the viscera of the abdomen, particularly when accompanied by irritation of the intestinal mucous membrane, as manifested by griping and diarrhoea. After two days there was a slight fetor of breath apparent, and we gave the pills twice a day instead of every fourth hour, as our object was to affect the system gently, and not bring on profuse salivation. These remedies, with the use of blisters over the region of the uterus, will be quite sufficient to remove the disease. The metritis is not very acute, nor has it anything of a specific character; there is no puriform or other morbid discharge from the vagina, and the patient is a young woman of good constitution.\*

A patient who is at present in the chronic ward presents some circumstances worthy of observation, as connected with peculiar varieties in the alvine discharge. She has been labouring for some time under melæna, and, as you have observed, passes daily a large quantity of dejections from her bowels, as black as ink. The colour of matters discharged from the bowels is subject to very great variety. In some cases they are clay-coloured or whitish, somewhat like barm; and I have seen them still whiter, and approaching the hue of milk. It is in cases of the latter kind, where the discharges are of a milky appearance, that persons have been said to pass chyle, and their emaciation has been attributed to a deficiency of nutriment depending on this cause. This, however, is not the fact; in some cases of chronic dysentery and diarrhoea, a fluid whitish discharge takes place from the rectum, but this is not chyle, it is only the changed mucous secretion of the irritated portion of the bowel. It is very curious to observe what different products the same set of secreting vessels will give rise to, according to the mode in which their vital action is affected.

In other cases the discharges from the bowels consist of fatty matter, which bears a strong resemblance to wax or adipocire. Again we may have them of a very dark, or even black colour. I have seen the stools quite black in particular forms of dyspepsia. Some time ago I attended a gentleman at Drumcondra, who exhibited this change in the colour of the intestinal secretions to a very remarkable degree. He was a very large man, accustomed to eat and drink very heartily, having, no doubt, a very capacious stomach and bowels, and a great quantity of fluids and solids. I

\* This patient speedily and perfectly recovered.

mention this in order to give some explanation of the enormous quantities of this black fluid which he passed by stool and vomiting. After complaining for a considerable time of dyspeptic symptoms, he got an attack of vomiting; and as he drank freely of diluents during the act of emesis, the quantity of this black fluid which he threw up was amazing; indeed, I might say, without exaggeration, that he vomited by the gallon. With this he had eructations of sulphureted hydrogen to such an extent, that it was almost impossible to remain in the same room with him. His tongue was as black as ink, and though frequently cleansed, resumed in a short time its former hue. He also passed an enormous quantity of the same stuff by stool. This matter I ascertained, by numerous observations and experiments, to be a secretion from the mucous membrane of the bowels, and not depraved bile or blood changed by the acid secretions of the bowels. Black stools may also depend upon the presence of other matters, as in case of melæna. Melæna consists of a discharge of grumous blood from the intestines, either with or without black matter. The following is the way in which it occurs. Blood is secreted slowly into the intestinal tube; while it remains there it is acted on by the acid secretions of the intestines, the effect of which is to change the colouring matter into a black, and in this state it is passed by stool. Again there are other cases in which the discharges from the bowels are found of a tarry and viscid consistence, and having a greenish-black appearance: this would appear to be connected with a vitiated state of the biliary secretion.

I have spoken here of three species of black discharge, each of a different kind and requiring to have a distinction made between them for practical purposes. Now it is said, if blood be present you can easily recognise it by putting a portion of the discharge, inclosed in a small linen bag, into warm water, when, after remaining some time, the linen will be stained of a reddish colour. If you take a portion of the tarry discharge, and drop a little of it into water, it will communicate to it a yellowish stain. On the other hand, the black fluid, which consists of vitiated mucous secretion, will not impart either a red or yellow tinge.

I may further observe, that various substances used medicinally communicate a particular tinge to the alvine discharges. Thus acetate of lead, when it meets with sulphureted hydrogen in the intestines, changes the stools to a black colour. Again, many of the salts of iron have the same property. Other substances, such as logwood, bilberries, &c., impart to them a red tinge, while the continued use of chalk mixture is apt to render them whitish or of the colour of pipe-clay. This is apt to give rise to suspicions of the existence of obstruction of the liver; and in one instance I was deceived for some time by it myself. With respect to the greenish-coloured discharges, they are those which are most frequently met with, particularly in children, and are therefore entitled to a greater degree of consideration. There is nothing more common than to

meet with cases of this green discharge during the period of infancy ; and I regret to state that a great deal of error has prevailed on the subject. Greenish stools are generally looked upon as a sign that the child's liver is out of order, and as an indication for giving calomel. This, however, is by no means true ; they not unfrequently depend upon irritation of the intestinal mucous membrane approaching to inflammation. The proper mode of treatment here consists in adopting measures calculated to remove irritability. In such cases, warm baths, the application of rubefacient liniments to the abdomen, the use of antacids, such as chalk mixture, the carbonates of soda and ammonia, small doses of laudanum, and hydrarg. c. creta with Dover's powder, form the best remedies ; and their operation will be very much assisted by a careful attention to diet. You will sometimes, it is true, meet with greenish discharges in adults, but then they are not so fluid as those of children, nor are they attended with the same irritability of the gastro-intestinal mucous membrane. Here the best plan of treatment is the Abernethian : blue pill at night, and a mild aperient in the morning, will be sufficient to correct the intestinal derangement, particularly if assisted by a well-regulated diet, and exercise in the open air. But in children the greenish discharge is often of a much more acute character, and more closely allied to inflammation, or rather irritation ; although in some cases it may go on for a considerable time without producing any acute disorganisation. It is on account of the property which calomel and other mercurials, exhibited internally, possess of causing irritation in the first instance, and if pushed farther, inflammation of the mucous membrane of the intestines, that they are also apt to produce discharges from the bowels, copious, fluid, and mixed with green mucous flocculi, resembling closely chopped *spinach*. Sometimes the dejections consist of this green mucus nearly unmixed with anything else, and then they appear like semi-fluid boiled *spinach*. Now most practitioners think that this green colour is derived from bile which the mercurial has brought down in unusually great quantities from the liver, excited to a more energetic act of secretion. It has nothing to do with the bile in many cases, but is entirely derived from the irritated membrane of the intestines. Long ago I pointed out, and was the first to point out, this fact, in the Dublin Hospital Reports. It has very important practical bearings.

## LECTURE XIX.

On the influenza — Course and progress — Effect of climate, locality, &c. — Mortality — Peculiarities of epidemic of 1837 — Symptoms — Singular case with hernia.

[*NOTE.* — Many of the following observations on influenza were added two months after the lectures had been delivered, but have been, for obvious reasons, incorporated in the lectures, rather than appended as notes. These lectures not being intended to furnish precise and complete details of all the symptoms of influenza — a task now unnecessary, having been performed by various writers in the *Medical Gazette*, and other periodicals — I have confined my attention chiefly to points from which general pathological conclusions, and views of the nature of epidemic diseases, may be derived. — R. J. G.]

I ADVERTED yesterday to the subject of influenza, and endeavoured to point out some of the principal features in which epidemics differ, as to their mode of spreading, from diseases which owe their diffusion chiefly to contagion. I stated that contagious disorders were comparatively slow in their progress, attacking different masses of the population in succession, and exhibiting, in general, a tendency to affect distinct classes of the community at different periods. On the other hand, when an epidemic like influenza makes its appearance, everything comes under its influence almost simultaneously, and it overshadows the whole country in the space of a few weeks. Such is the course of the present epidemic, and so it was with the influenza of 1782, which travelled from the east, and left traces of its ravages in almost every quarter of the globe. In the case of epidemics which traverse the whole, or nearly the whole extent of the inhabited portion of the earth, it would be a matter of great interest to ascertain the place of their first appearance, or their point of departure. The cholera commenced in Hindostan, and in its route followed the great lines of communication and commerce; its general progress has been north-west; but in Portugal, Spain, and Italy, it has travelled in various directions; its progress, however, being in general along the great lines of communication leading from the part of the frontier where it first broke out, towards the large towns in the interior. It is probable that influenza pursues some certain and uniform course, independent of the physical circumstances which retarded, accelerated, or stopped the progress of Asiatic cholera. It is likely, too, that its rate of spreading is subject to fewer variations. Cholera took years to accomplish its journey from Hindostan to Britain; but, once established there, it crossed the Atlantic at a single step. The march of influenza has not as yet been mapped out, but, from the accounts which have reached us, it seems to have travelled at the same time in very different directions, arriving at Cape Town in January, during mid-summer, and in London in the same month, during mid-winter;

while it is reported to have reached New Holland, and to have raged among our antipodes, two months earlier.

It is obvious that influenza does not depend upon mere variations of temperature, for we have had many seasons as changeable as the present, without the occurrence of any such epidemic. Besides, influenza is known to be a disease which travels through the most different climates, preserving its peculiar character and identity in all. It is not to be supposed that the same temperature, or the same barometrical and hygrometrical conditions of the atmosphere, prevail here as in Spain, France, Germany, or Sweden; yet in all these countries the present influenza has exhibited an uniformity of character, and an identity of type, proving beyond all doubt that it is one and the same disease. That influenza is not produced by a low temperature, is proved by the occurrence of the disease in the month of June, in the epidemic of 1762; and in the months of May and June, in that of 1782; as well as by its appearance at the Cape of Good Hope in the middle of summer, as I have already noticed. At present, influenza is rather on the increase in this city; and yet you have observed that, for the last week, the weather has been remarkable for its serenity and agreeable mildness. In London, many were led, by a limited view of the subject, to consider its origin as connected with the breaking up of the frost, and the peculiar state of atmosphere attending a general thaw. Influenza is not influenced in its progress by situation or locality; it does not creep along the shores, or follow the course of large rivers, or select low marshy districts, in preference to drier and more elevated soils.

From what has been said, it is obvious that influenza does not depend upon vicissitudes of temperature, peculiarities of situation, or supposed moist or dry states of the atmosphere; neither does it arise from the prevalence of certain winds, for meteorological observation furnishes many instances of the prevalence of such winds without any influenza; and, on the other hand, it frequently travels against the wind. It is probable that influenza may depend chiefly on telluric influence — upon some agency connected with variations in the physical conditions which operate on the external surface of our planet; but on this point we can only speak conjecturally, in the present state of our knowledge, and we should not allow ourselves to lapse into more speculative and fruitless disquisitions. How often the variations to which I have alluded occur, and whether they are subject to any general law, remains yet to be determined. Several epidemics of this description have been distinctly recorded in the eighteenth century, viz., in 1708, 1712, 1729, 1732, 1742, 1762, 1767, 1775, 1782, 1789; while in the portion of the nineteenth century already elapsed, four influenzas have occurred, viz., in 1803, 1831, 1834, and 1837. This list is as complete as our medical annals will permit us to make it, but still we cannot rely on it as including all the epidemics of this nature which have occurred during the last one hundred and

thirty-seven years. Supposing it correct, it would indicate the average return of influenza once every ten years. In making calculations of this kind, medical writers should always take care not to confound influenza, or disease which spreads rapidly over the whole globe, regardless of season or climate, with those local catarrhal affections that occur in all temperate climates almost annually. One thing, at least, is certain with respect to this disease, that it does not arise from exposure to cold, or, as it is termed, from catching cold. This I have repeatedly observed. Persons who took the best care of themselves, who always went warmly clothed, and were never exposed to the inclemency of the weather, took the disease just as readily as the half-clad labourer, who had to undergo daily exposure to all the vicissitudes of our changeful climate. But it should be observed, that although the attack of influenza in any individual was not necessarily dependent on exposure to cold, yet in many instances it was evident that catching cold determined the immediate access of influenza, or increased its violence when present.

I have also observed, that it seldom attacked persons labouring under acute diseases, until the period of convalescence arrived, when their immunity ceased, and they became just as liable to its invasion as others. Thus patients labouring under typhus escaped as long as the fever continued; but frequently, on the very day the crisis occurred, and symptoms of returning convalescence appeared, they were seized with influenza. This is a very unfortunate circumstance. Just as a patient had struggled through a fever of seventeen, nineteen, or twenty-one days, he was attacked with a new and dangerous malady, which again placed him in a situation of imminent danger.

You must have observed, that influenza does not appear in every individual with the same violence, or exhibit in all, symptoms identical in their intensity or duration. As in most other epidemics which affect society at large, the different constitutions and ages of the individuals, and the different states in which the morbid influence finds them, modify greatly the nature of the attack; so that, although a vast number are affected, they suffer in very different degrees, and the complaint exhibits every variety of shade, from simple coryza, or catarrh, requiring no treatment, to catarrhal fever of the worst and most unmanageable description. Many persons laboured under what would be termed a common cold, were it not from the extreme frequency of such symptoms, combined with other circumstances which mark the nature of the disease. The same thing was observed with respect to cholera: few persons, during the prevalence of cholera, escaped without undergoing some form of bowel attack; but the mode and character of such attacks varied very remarkably. It remains to be ascertained whether the poison which gives rise to intermittent fever, or to typhus, is also capable of being conveyed into the system in different doses, and of giving rise to corresponding derangements of health.

Dr. Rush brings forward many facts to prove, that when the causes of yellow-fever do not act with sufficient energy to produce in the constitution that particular form of disease, they may nevertheless occasion fevers of a less violent character, or may even give rise to chronic derangements of the general health, unaccompanied by fever. This is rendered more probable, when we recollect the great length of time certain poisons continue to exert a baneful influence on the health. Thus, Assistant-Surgeon J. W. Macauley informs me, that one officer and several men, inmates of the Royal Hospital in Dublin, are suffering from ague, the poison of which they imbibed in the ill-fated Walcheren expedition.

Very lately, an officer of rank, much distinguished in the Peninsular war, came from England to consult Mr. Crampton, Dr. Kennedy, and myself. Among other ailments, he was affected with evident traces of a vernal tertian, contracted in Portugal about twenty-seven years ago, and which has seldom failed to return annually ever since.

Influenza is not by any means so severe or so rapidly fatal a disease as cholera, but the mortality which it has produced is greater, as it affects almost every person in society, while the ravages of cholera were comparatively limited. Consequently, although the proportion of deaths among a given number of individuals attacked was greater in cholera, the mortality for society at large is much greater in influenza. In Dublin, it is extremely difficult to obtain anything like exact statistical details of the comparative mortality at different periods, for no general registry of deaths is kept in this city. Through the kindness of Mr. Eiffe, secretary to the Caledonian Insurance Company, I have been enabled to get an accurate return of the interments in Prospect Cemetery, at Glasnevin, in the suburbs of this city, for the months of January and February, during which influenza was very prevalent, as also for the corresponding months of the preceding year. He has also furnished me with an account of the burials during the months before and after influenza.

*Interments at Prospect Cemetery, Glasnevin; probably the largest in Ireland.*

In December, 1835, . . .	355	In December, 1836, . . .	413
January, 1836, . . .	392	January, 1837, . . .	821
February, 1836, . . .	362	February, 1837, . . .	537
March, 1836, . . .	392	March, 1837, . . .	477
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Total for four months	1501		2248
Increase during influenza, 747.			

Assuming, then, that in Prospect Cemetery alone, about seven hundred persons were buried who died of influenza, and that there are at least three times as many persons buried in the other churchyards of the city and suburbs, we may conclude that in Dublin alone more than four thousand people died of the influenza, not taking into account the great number who, although they got over

the immediate attack of the epidemic, sank afterwards under various diseases, of which influenza had laid the foundation. In Paris, the influenza caused likewise a great mortality; for it appears, from a statement in the *Révue Médicale*, that the average daily mortality, during the first fifteen days of February, amounted to one hundred and ten, which is more than double the usual average. This only refers to persons dying in their own houses, and does not include the deaths in hospitals. Eighteen thousand die in private houses annually in Paris — *i. e.*, on an average about fifty daily. The rate varies from twenty to seventy a day, according to the season; but during the first fifteen days of February, it rose from fifty-eight to one hundred and fifty-two in the day.

Influenza has been very fatal where it attacked persons who had been subject to chronic bronchitis, or who had happened to labour under any form of asthmatic affection; for this, I confess, I was not quite prepared. And when first called to attend asthmatic persons labouring under influenza, I expected that, from being accustomed to periodic attacks of dyspnoea and cough, they would be better qualified to bear the disease, and would continue to exhibit that tenacity of life for which asthmatic persons are so remarkable. The old also suffered considerably; but some very old persons had extremely severe attacks of influenza, and yet escaped. I attended, along with Mr. Maurice Collis, the venerable Judge Day, the contemporary of Goldsmith, who, at the age of ninety-three, had sufficient strength of constitution to shake off a most violent seizure. Two gentlemen, who had fought at the Battle of Bunker's Hill, also survived the disease in a severe form; but generally speaking, it was very fatal among the aged. Influenza was also very fatal among persons who laboured under disease of the heart; and in this instance, age made no difference as to result, for the young and old were equally liable to danger. I have also seen it fatal in cases of deformity of the chest, from curvature of the spine, and other causes. The mortality was also very great among persons in advanced life who laboured under *tussis senilis*: in a word, all persons labouring under pulmonary irritation, or weakness, were exposed to very considerable danger. Subsequent experience has proved also, that where influenza left behind it an obstinate and irritative cough, and where the constitution had a scrofulous taint, the disease was very apt to pass into tubercular phthisis. Among all the families I know, but two escaped the influenza altogether: one consisted of eleven children, besides the parents and servants, and resided in Pill Lane, in the very centre of the city; the other consisted of five females, advanced in life, and who lived in one of the fashionable streets.

Allow me to digress here for a moment, for the purpose of making one observation, which a review of several cases of influenza, attended with severe pulmonary symptoms, suggests to me. It is a common error in pathology to confound effects with causes, and where the cause of a disease is not, and probably cannot be

known, to fix on some peculiar and leading symptom, and attribute to it the origin of all the rest. But it is quite illogical to say that one symptom is the cause of another, or that because it has the precedence, it should also have the initiative. I alluded to this error in a former lecture, when speaking on the pathology of scarlatina. It has been over and over again asserted, that the dropsy of scarlatina arises from the previous inflammatory affection of the skin, or subcutaneous tissues; and the same thing has been asserted with regard to the desquamation of the cuticle. But I have brought forward facts and arguments to prove that this opinion is not founded in truth, and that dropsy, as well as desquamation of the cuticle, may take place where there has been no eruption whatever, and not the least trace of cutaneous or subcutaneous inflammation. Now when a person, after exposure to cold, gets pneumonia or bronchitis, followed by anasarca, it is quite a common thing to hear it said, that the anasarca had its origin in the pulmonary affection, and that the effusion of serum depended on obstructed transmission of blood through the lung. The same mode of explanation has been applied to disease of the heart as the cause of dropsy. This explanation, however, appears to me inadequate and unsatisfactory. Many cases of influenza were accompanied by extreme congestion of the lungs, and consequently imperfect aeration of the blood; and yet I have not in a single instance noticed the occurrence of dropsy as an immediate or remote consequence. Were dropsy dependent on the state of the lung to which I have alluded, it would have shown itself in some cases at least; and yet I have seen individuals attacked with influenza labouring under orthopnoea and severe pulmonary symptoms for weeks, without observing, in any instance, the slightest anasarca or œdema.\* This has strongly impressed upon my mind the conviction, that when dropsy comes on after disease of the lung, that the one is not always the consequence of the other, but that both often result from the same cause, and owe their origin to the same morbid impression on the system. This error has been further confirmed by the results of treatment, practitioners having found that measures adapted to remove congestion of the lung tended also to remove the dropsy; forgetting here, that where two symptoms closely allied together arise from the same cause, you will be most likely to relieve both by those means which are effectual in removing either. The principles which I have here briefly alluded to, will apply to many other combinations of disease; it is one of general application, and, in my mind, of no ordinary importance.

The present epidemic differs in many points from that which prevailed here about three years ago. The influenza of 1833-4 was by no means so generally fatal as the present. It was charac-

\* I saw one old gentleman at Rathmines, whose feet and legs were much swollen; but this I attributed to his having remained so many days and nights in his chair, unable to lie down. He was under Mr. Crampton's care, and recovered.

terised, like the present, by considerable irritation of the tracheal and bronchial mucous membrane, but not by the severe bronchitis and pneumonia which have been witnessed in many cases of the present disease. The former raged in Dublin chiefly during the months of March and April; it came on very suddenly, with rapid pulse, hot skin, great prostration, languor, and excessive sweating; there was cough, coryza, and, not unfrequently, vomiting at the commencement. One of the most prominent symptoms, however, was headache, which was excessively severe. There was also, *ceteris paribus*, more debility, and the patients did not bear bleeding so well as they have done at present. But the most material point in which they differ is the comparative mortality. The disease in 1834 carried off some very suddenly with cerebral symptoms, and proved fatal to others from oppression of the chest and dyspnoea. Few, however, died, who survived for a week after they had been attacked, and the disease rarely left behind it a cough at all approaching in violence and obstinacy to that which now harasses convalescents. On the whole, the fever accompanying the influenza of 1834 was more acute, and set in with more marked depression of the nervous system, than that which attends the present, and the disease was much less liable to become chronic.

It would conduce greatly to the advantage of medical science, if a brief and accurate history was left to posterity of the character, symptoms, pathological phenomena, and treatment of every epidemic. Such a record would prove a guide and beacon to the practitioners of future ages — would enable them to draw important comparisons between the existing and the past — and thus arrive at a more fixed and available knowledge of the nature and habits of epidemic complaints.

There are, I have no doubt, many curious forms of epidemic disease which pass through society either wholly unnoticed, or confounded with others to which they have some slight affinity. I think I have seen particular forms of scarlatina, measles, small-pox, and fever, which have not been accurately noted, although they prevailed as epidemics. If every form of epidemic was noted, and the order of its succession marked, it would remain to be ascertained by posterity, whether there may not be what may be termed cycles of epidemics, and whether disease, after having manifested itself in determinate forms, following each other in determinate succession, may not commence again after the lapse of a certain number of years, and pursue the same course. This is not impossible, if we suppose that epidemics are connected with telluric or electrical influences, which are now known to observe a periodic course. Were this ascertained, a sort of observatory of epidemics could be easily established in the various civilised states.

In treating of the nature of the present influenza, it will be proper to consider, in the first place, the general constitutional symptoms which attend it, and afterwards glance at those which are chiefly of a local description. In some cases of influenza there

is little or no fever ; neither does the presence of fever seem essential to the more severe or even fatal cases, although, generally speaking, fever occupies a very prominent position among the group of symptoms by which the disease is characterised. I have seen cases in which there was nothing like regular fever from beginning to end, and yet which terminated fatally.

I am at present treating two patients who have been labouring under orthopnoea for the last ten days, and yet in these patients the skin is cool, the pulse in general soft, and very little above the normal standard, and the tongue, though furred, quite moist ; yet so great is the distress of respiration, that they are obliged to remain sitting up in bed night and day, panting for breath ; and I am of opinion that both will die. This, however, is the exception with respect to severe cases, the majority being attended with very considerable fever. In the slight cases, the fever is scarcely perceived, or altogether absent ; this was the case with myself and some of my friends. We had coryza, hoarseness, cough, and some degree of pulmonary irritation, without any fever. At first, I thought that fever was an essential part of the disease ; but the cases to which I have alluded, and others of a similar kind, have convinced me that this is not the fact. Where the fever appears, it comes on with the usual symptoms of pyrexia — namely, sense of chilliness, particularly about the small of the back, without decided rigors, flying pains in the limbs and joints, and headache, generally referred to the situation of the frontal sinus. There is, from the commencement, great restlessness, jactitation, and more or less insomnia. Sickness of the stomach, loss of appetite, and tendency to diarrhoea, are also common symptoms. The skin is in general hot, and without any tendency to moisture, although, in some cases, there are occasional perspirations. These, however, are seldom general or regular, and last only for a few hours. The pulse is accelerated and tolerably full, occasionally even hard and wiry. These symptoms are very subject to slight exacerbations and remissions, and seldom continue the same for more than twelve hours together. Where the disease exists for any length of time in a violent form, the tongue usually becomes furred and loaded, the patient loses all relish for food, and in many cases complains of harassing thirst. In severe cases, the most prominent symptoms are cough, wheezing, restlessness, dyspnœa, and loss of sleep. The appetite is generally more or less impaired ; but I have seen some severe cases in which it did not fail remarkably for several days ; the restlessness and jactitation attend many cases throughout. You are not, however, to suppose that this always depends on the presence of pain or fever. The headache is not in all severe or distressing, and I have already stated, that the fever is not so general or so violent as one would suppose. The loss of sleep depends upon derangement in the tone of the nervous system, independent of fever ; for I have observed it in numerous patients, in whom scarcely any febrile excitement was observable ; but when

complicated with fever, both react upon and aggravate each other. The skin, where fever is present, is hot ; this heat is interrupted by occasional perspirations, which, however, do not give much relief, or tend to diminish the amount of increased temperature. Sometimes the skin is hot, and at the same time bedewed with perspiration during the whole course of the disease ; but this is rather unusual. The pulse is seldom the same throughout ; one time you will find it quick and rather hard ; in six hours afterwards it will be quick and soft ; in six or eight hours more it will appear as if about to fall to the normal standard, and next day you will find it quick and jerking again. These changes are accompanied by corresponding alterations in the temperature and humidity of the skin. But what is most remarkable with regard to the pulse is, that it sometimes becomes full, and rather strong and wiry, towards the termination of the disease ; and this you will observe in patients who have been suffering for days, or even weeks. I have been attending for the last fortnight, with Mr. Colles, a gentleman in Castle street, aged sixty, of a full habit, and subject to attacks of dyspnœa and cough during winter. This gentleman was attacked with influenza, ushered in and accompanied by severe fever ; and it was observed that, as the disease advanced, his pulse became fuller and stronger, so that it was thought advisable to bleed him. He was bled with apparent relief, and the blood was extensively buffed and cupped. This phenomenon I have observed in every case attended with fever, and indeed in some where no appreciable fever existed. Thus, a gentleman in Dame street, who had no fever, and who merely laboured under teasing cough, distress of respiration, and oppression of the chest, the blood, on being drawn, exhibited very distinct buffing and cupping. The same thing happened in the case of a gentleman, in Dominick street, whom I ordered to be bled under exactly the same circumstances. The gentleman in Castle street, whom I attended with Mr. Colles, exhibited a very curious state of pulse. In him, as in many others, the pulse was extremely variable as to its strength, being at one time hard and firm, and at another soft and weak. If you were to visit him in the morning, from the feel of the pulse you would be inclined to give him stimulants ; if you saw him for the first time on the evening of the same day, you would think venesection indispensable. This gentleman's state was hopeless ; he laboured under great suffering, dyspnœa, and inability to cough up the viscid mucous secretion, and yet his pulse was both strong and firm. Mr. Colles, whose attention I directed to the state of the pulse, observed, that were he to feel it without seeing the patient, or knowing his previous history, he would be greatly inclined to bleed him immediately. I have adverted in a former lecture to this state of the pulse, as connected with irritation of the nervous system, rather than with any inflammatory state of the constitution in general, and therefore I shall not now recur to the subject, further than to remark, that I have never observed any disease in

which the pulse formed so bad a guide as to the propriety of venesection as the present epidemic. In some cases, venesection was most useful, although the pulse was in every respect natural; in others, it could not be borne even to the smallest amount, although the pulse was hard and wiry. Neither was the state of the blood an unerring guide, for even in those who sank rapidly, from the debilitating effects of moderate bleeding, the blood was very much cupped and buffed.

Before I conclude, I shall mention the particulars of a very remarkable case which came recently under my notice. I was called to visit a lady, somewhat advanced in life, but of a good constitution, and labouring under the ordinary form of influenza, with considerable dyspnoea and cough. In the course of eight or nine days, her symptoms began to decline; she got up, and seemed convalescent. As the cough and pulmonary irritation still prevailed to a certain extent, it was thought advisable not to allow her to eat meat, but she obtained leave to take some fresh haddock. After dinner, her cough becoming more troublesome than before, she had frequent recourse to a stale and rancid cough-bottle, containing squill and ipecacuanha. During the evening and night, she felt her dinner like an undigested load, and her stomach turned. She vomited, and was purged and gripped incessantly, until I saw her next day. On the third day, the medicines I had ordered moderated the purging, but the nausea and occasional vomiting continued. On the fourth day, the purging had entirely ceased, but the sickness of stomach persisted. I sought to appease this by the ordinary means, which failing, I examined her with care on the following day, and discovered a strangulated hernia. At this time the pulse had scarcely risen above the natural standard. Mr. Cusack operated that night with his usual skill, and all the symptoms depending on incarcerated hernia ceased. But they had scarcely disappeared, when the pulmonary symptoms, and the copious secretion from the bronchial tubes, recurred, and she did not survive this relapse of the influenza more than a few days.

This is an instructive example of an insidious combination of circumstances very likely to mislead a practitioner. For as the vomiting was for a day or two accompanied by a looseness of the bowels, the suspicion of hernia would not strike the attention. It is plain that in this case indigestion produced an increased and morbid activity in the motions of the alimentary canal, which led to the incarceration of the portion of gut. Up to a certain moment the symptoms depended merely on one cause; after that period, strangulation took place — an occurrence which could not be easily diagnosed, as vomiting, one of the most striking symptoms, had previously existed.

## LECTURE XX.

Influenza continued — History of the symptoms — Stethoscopic phenomena — Post-mortem appearances — Extent to which the nervous system is implicated — Character of the sputa — Appearances of the urine — Cerebral affections — Bleeding only to be employed at the onset — opiates in conjunction with antimony or nitre — Blisters generally inefficient — Warm fomentations beneficial.

In my last lecture I alluded to the affection of the intestinal canal in influenza, and stated that in many cases there is derangement of the digestive tube — as manifested by thirst, anorexia, nausea, or even vomiting, and a tendency to diarrhoea. When diarrhoea occurs, it is generally at the commencement of the disease; and it is remarkable that this state is frequently exchanged, rather suddenly, for one of an opposite character. Thus, when you have succeeded in checking the diarrhoea with chalk mixture and opium, a state of costiveness will frequently ensue, requiring the daily use of purgatives and enemata. I have now witnessed several cases in which the moderate use of opiates and astringents brought on constipation, requiring the use of strong purgatives and enemata, thrown up with Read's syringe.

In influenza, as in many other febrile affections, the lungs become considerably engaged; the disease first attacks the nose and throat, then the larynx and trachea, and, finally, the ultimate ramifications of the bronchi. There are several other affections which commence in a similar way — as ordinary catarrh, bronchitis, and measles. In influenza, most persons have the nose and throat affected in the beginning; the inflammation creeps gradually along the lining membrane of the air passages, until it involves the greater part, or the whole, of the bronchial mucous membrane. The progress of the inflammation is extremely rapid, and in the course of twenty-four, or even twelve, hours the lungs become engaged. There is, however, much difference as to the extent to which this inflammation proceeds. In many cases, it is limited to the nose and throat; the patients complain of coryza, hoarseness, and slight cough. In others, the trachea also is more or less affected, and the cough is more troublesome; but generally speaking, the latter as well as the former cases are unattended with fever. The patients eat and drink as usual, go about their ordinary business, and sleep tolerable well at night. This appears to be the general course of the disease when the inflammation is limited to the, nose, throat, and upper part of the air passages; when it spreads farther, and attacks the first ramifications of the bronchi, there is some dyspnœa and tightness of chest, the cough is much more troublesome, and the appetite and digestion are somewhat impaired; but persons in this state, although resting badly and eating but little, will continue to go about — constantly, however, complaining that they are very ill. When the smaller divisions and ultimate

ramifications of the bronchi are engaged, there is soreness of chest, remarkable dyspnœa, and constant harassing cough ; the headache is also aggravated, the patient loses all inclination for food, sleeps badly at night, and is confined to the bed or house. First, then, you have the mucous membrane of the eyes, nose and throat affected ; then the larynx and trachea ; then the larger bronchi ; and finally, the smaller and more minute ramifications. When the latter state has continued for some time, more or less serous engorgement of the lung takes place, and this adds to the dyspnœa and cough. On applying the stethoscope over various parts of the lung, you will hear at various parts a moist crepitus, indicating the existence of serous infiltration. The smaller bronchial tubes and air vesicles are congested and filled with mucus ; the blood cannot pass freely through the lung, and consequently must be imperfectly aërated ; the secreting and absorbing functions of the lung are deranged, and hence arises a state in which the pulmonary capillaries become congested, and permit the more fluid part of the blood to exude into the parenchyma of the lung, giving rise to what is termed serous infiltration. Something similar to this occurs also in general bronchitis, particularly in fever, but we very seldom have hepatisation resulting from such causes. In hepatisation, the capillaries pour out, not serum, but lymph, which glues together the cells of the pulmonary tissue, and forms a dense solid mass. Hence, in influenza or bronchitis, you seldom have true pneumonic inflammation. You will have extensive and dangerous engorgement, but when you examine the lung after death you do not find any real solidification, and you can restore the lung almost to its original permeability and buoyancy by squeezing out the infiltrated fluid. Yet I must admit that this is not always the case, and that in influenza, as well as in bronchitis, you may have true pneumonia superadded to the original affection of the lining membrane. This occurred in the case of a lady whom I attended in Chapel street, and who was attacked with influenza shortly before delivery. On the day of her accouchement, pneumonia was superadded to the bronchial inflammation, and she died with extensive hepatisation of the right lung. This also occurred in the case of a man of middle age, residing in Suffolk street, who had been labouring for some days under excessive engorgement of the lung. I have also observed the same occurrence in a gentleman whom I attended with Mr. Colles, in Exchequer street ; and in another case which I saw in Whitefriar street.

One of the most singular features in the history of the present influenza is the extraordinary degree of dyspnœa witnessed in most cases where the lung is extensively engaged, but particularly where the patients had been previously subject to pulmonary affections ; and even in many cases where the bronchial mucous membrane is but slightly engaged, the amount of dyspnœa is remarkably great. Indeed, it might be said with much truth, that the dyspnœa was by no means proportioned to the extent of pulmonary inflammation.

There is at present in the hospital a woman labouring under influenza, whose chest sounds clear on percussion, and in whom every part of the lung is permeable, who presents nothing more than a few sonorous râles in the course of the larger bronchial tubes, and yet she is suffering from considerable dyspnœa, and the respirations amount to forty-six in a minute. We cannot, therefore, attribute the difficulty of breathing to mere bronchitic lesion, for it is not in proportion to this lesion. Another patient admitted into Sir P. Dun's Hospital exhibited a similar train of symptoms. He was a negro sailor, a native of New Brunswick, and was seized with the epidemic a few days after his ship arrived in Dublin; he was a man of Herculean form and finely developed chest, and in the prime of life. His suffering from dyspnœa was intense; his chest heaved, he tossed about in bed in a constant state of agitation and restlessness, and yet the respiratory murmur was everywhere distinctly audible through the lung, and no râle could be heard, except here and there a few bronchitic wheezings. He also laboured under insomnia, and, though he had but little fever, his debility was extreme. Indeed, his pulse was so weak from the commencement, that I could not venture to treat him antiphlogistically; and I accordingly ordered extensive vesication over the chest, with the use of wine, stimulants, and narcotics. This man subsequently recovered — an event which could scarcely have occurred under the plan of treatment adopted, had his dyspnœa depended on mere bronchitis. It should be also borne in mind, that in many bad cases of influenza the dyspnœa is intermittent, or at least undergoes remarkable exacerbations and remissions at certain hours of the day and night. It would appear that the respiratory derangement depends on the same general cause which produces the whole train of symptoms, and that it might exist even where there was no bronchial inflammation at all. It is true that where the bronchitis is present, it adds to the distress of respiration, but the dyspnœa appears to be chiefly attributable to some impression made on the vital activity of the lung. That the lungs are endowed with an inherent vitality necessary to the aëration of the blood has been long acknowledged by the Germans, who have described a dyspnœa from paralysis of the lungs; and this opinion is now generally adopted in Great Britain, since the results of the experiments on the eighth pair of nerves have been duly appreciated. We have abundant illustrations of this truth in asthma, in which the greatest dyspnœa is often present without any appreciable lesion of the lung. And it would be a fortunate circumstance for the patients in influenza, if this were not the case; for we could then treat the affection of the lung as ordinary bronchitis, and should expect to find it amenable to the ordinary remedies. You are aware that the mortality in cases of ordinary bronchitis is extremely small, if we except very young children and persons advanced in life. In adults, when met by prompt and appropriate treatment, it is in general a very manageable disease, and seldom proves fatal unless

combined with other unfavourable conditions. This, however, is not the case in influenza, nor is the pulmonary affection so easily treated, or the dyspnoea so readily controlled. I saw, some time ago, a fine young woman, servant to a gentleman in Fitzwilliam street, for whom everything had been done which the best and most skilful practice could devise; but her condition, when I saw her, was desperate, and she died the following day; yet her chest sounded well on percussion, and we could hear nothing over the whole lung except a few sonorous and sibilous râles, and the respiratory murmur seemed everywhere nearly as loud as natural. Of course, such a lesion of the nervous influence could not last long without necessarily inducing pulmonary congestion — an inevitable consequence of imperfect aëration of the blood. When the eighth pair of nerves is divided, the animal is slowly suffocated; and, on dissection, the lungs are found engorged, and the bronchial mucous membrane congested and inflamed. May not the affection of these parts in influenza be sometimes induced by lesions of nervous power in the lungs? I am indebted to my friend, Dr. George Green, for the following results of his very numerous post-mortem examinations in this disease, and I feel great pleasure in being able to give them — as such examinations, at least in this country, are very rare. Dr. Green observes:—

“The cases which proved fatal at the House of Industry, during the late epidemic influenza, occurred principally among the aged inmates of both sexes. I had an opportunity of examining several of these cases, and the following were the principal post-mortem appearances observed.

“The bronchial mucous membrane was found, in every case, more or less congested and inflamed. The colour varied considerably — being in some of a dull red, and in others of a much darker hue. The inflammation, in most cases, was found to occupy both the trachea and the bronchial tubes of both lungs; in other instances, it was confined to one lung alone. A sanguinolent frothy mucus occupied the area of the tubes, and increased in quantity as they were traced to their minuter divisions. The parenchymatous tissue of the lung was invariably discoloured, being generally of a dark or violet colour; its specific gravity was increased, and it did not crepitate, or at least very feebly, when pressed between the fingers. The surface of its section was not rough to the touch, and when pressed in the hand a quantity of the mucus described above was driven out. In some cases, the postero-inferior portions of one or both lungs were very dark coloured, and the finger could be passed easily through its substance. When the surface thus torn was examined, it did not appear to be granular; it resembled more a portion of gangrenous lung, except that there was an absence of fetor. This last appearance was found principally in very aged persons. It was rare to find any traces of the second and third stages of ordinary pneumonia in these patients; but in the young and robust, who were received into the Hardwick Fever Hospital

from the neighbouring streets, these degenerations of the structure of the lung were observed, together with the same inflammation of the bronchial mucous membrane.

In most of the aged patients, the blood was found dark coloured and fluid in both cavities of the heart, and in every vessel where it was examined. The cases in which fibrinous concretions in the cavities of the heart were found, were very few, and these invariably in the young or middle aged. In the former class of patients, also the lung occasionally appeared to be œdematosus; and, in one or two cases, a considerable effusion of serum had taken place into the pleural cavities. The signs of recent pleuritis were very rare, but old adhesions, as might be expected in such subjects, were very commonly found between the pulmonary and costal pleuræ. In one case of a lunatic, who survived the immediate attack of influenza, tubercles appeared to have been rapidly developed in both lungs. In another lunatic, two tubercular cavities were found in addition to the state of the lung and air-tubes already adverted to.

"With respect to the nature and duration of the symptoms of those cases which came under my own management, I have little to say in addition to what is already so familiarly known. The physical signs afforded by percussion and auscultation were almost universally as follows:—Dulness, more or less decidedly marked, in the postero-inferior portions of the lungs; sonorous or some form of the bronchial râles throughout the chest, or, what was more common, a mixed sonorous and crepitating râle, or, in the latter stages, a muco-crepitating râle. The sputa were seldom rusty-coloured or tenacious, but rather resembled those of bronchitis. In many cases, the want of power to excrete them appeared to be the immediate cause of death; but in others, the morbid cause, whatever it might be, appeared to have affected the entire respiratory and circulating systems, producing great congestion of the venous system, and a state not unlike asphyxia. The latter cases were almost all among the aged inmates of the House of Industry.

The appearances of the other viscera were not such as could in any way account for the result, so often speedily fatal; so that, so far as one could hazard a conjecture, the morbid cause appeared to have made its primary impression on the respiratory mucous surface, thereby interfering with the proper aëration of the blood, and inducing the changes in that fluid and in the structure of the lungs above detailed."

Such are the appearances observed by Dr. Green in his numerous dissections of persons who died of influenza. They may be relied on as perfectly accurate, for no one is better acquainted with pathological phenomena than Dr. Green, and consequently no one better able to furnish valuable evidence with respect to the appreciable changes produced by influenza in the pulmonary and other tissues.

I have already advanced the opinion, that we should not hastily assume that influenza consists essentially in the morbid changes

which dissection reveals; we should examine every side of the question, and consider whether it is not possible that the alterations in the pulmonary tissue may not be, to some extent at least, the consequences of the disease. Let us consider for a moment the method we pursue in reasoning about the progress and causes of the symptoms in ordinary bronchitis. Here a patient is seized with a pectoral affection, attended by cough, dyspnœa, and more or less fever. We find certain râles, and the expectoration is altered in quality and quantity. Further, observing a number of such cases, we remark that the danger is proportioned to the degree of dyspnea, and the dyspnoea to the extent and nature of the râles, together with the quantity and quality of the expectoration. To these the general constitutional affection, and the probable results of the disease, have certain definite relations, a knowledge of which is soon obtained by experience. But these râles, and this state of the respiration and expectoration, we have reason to believe, arise from the presence of bronchial inflammation; and to this we refer all the symptoms observed. On this supposition, too, we proceed in our treatment, and the result most commonly justifies its correctness; and we have additional evidence of its truth furnished by post-mortem examinations. Now, in such instances, the chain of inductive evidence is complete, and we feel a conviction that our practice is founded on correct notions of the nature of the disease. But how different is the case when we assume that influenza is caused by bronchial inflammation! In influenza, the dyspnoea is not always proportioned to the bronchitic affection — nay, in some cases we have seen that difficulty of breathing was most urgent in cases where the air entered into all parts of the lung with facility, and where few and unimportant râles existed. Again, although the presence of a copious viscid secretion in the bronchial tubes was sure to aggravate dyspnoea, yet it often occurred in patients whose air-passages were very little, or not at all, obstructed in this way. The effects, too, of remedies, antiphlogistic, expectorant, and derivative, were very different from what they would have been had the disease depended on a mere bronchitis. I have already stated my conviction, that the poison which produced influenza acted on the nervous system in general, and on the pulmonary nerves in particular, in such a way as to produce symptoms of bronchial irritation and dyspnoea, to which bronchial congestion and inflammation were often superadded.

In this view of the subject I am not singular, for I find that it has been advocated by Dr. Peyton Blakiston, in a short treatise on influenza, as it occurred at Birmingham. He states that his researches have led him to the conclusion, "that influenza is an affection of the nervous system, with its concomitant derangements in the organs of digestion, circulation, &c., commonly known under the name of nervous fever, accompanied throughout its whole course by irritation of the pulmonary mucous membrane, which not unfrequently amounts to congestion, and even to inflammation."

This distinction between influenza and feverish cold with bronchitis, is, in a practical point of view, of great importance, and should never be lost sight of in the treatment of influenza — for it prevents us from placing our sole confidence in remedies adapted to mere bronchitic inflammation. Thus, Dr. Blakiston asserts, and most physicians will agree with him in this point at least, that it was often necessary to have recourse to diffusible stimulants at the commencement, and to administer tonic medicines in an early stage of the disease.

In some cases, even where great dyspnoea exists, the cough is hard and dry, and the expectoration scanty ; in others, the expectoration is copious, so as to cause constant efforts to cough it up ; and, indeed, it is melancholy to look at the distress which patients suffer in this respect. You will hear the wheezing of the phlegm in the throat and air-passages before you enter the room, and you will see the patient exhausted by successive paroxysms of cough, and ineffectual attempts to expectorate. In other cases, where the vitality of the lung is less injured, and the general tone of the system less deranged, the sputa, although copious, are expectorated with considerable facility. The sputa bear considerable analogy to those observed in ordinary bronchitis ; they consist at first of a grayish mucus, which, as the disease proceeds, exhibits a globular appearance, or assumes a puriform character, and does not coalesce ; in other cases they are extremely viscid and ropy, like solutions of gum or isinglass. A remarkable fact with respect to the sputa in influenza is, that they are very seldom mixed with air-bubbles. On mentioning this to-day to some persons attending my class, I was shown some sputa discharged by a patient labouring under influenza, in which there were some air-bubbles ; this, however, is extremely rare. In a lecture which was delivered here some time ago, I took occasion to allude to the secretions of the bronchial mucous membrane, and stated my conviction that this subject had not received as yet the attention which its acknowledged importance demands. There is one point, in particular, of which no adequate explanation has been as yet given — namely, why it is that in some cases of pulmonary inflammation the sputa are filled with air-bubbles, while in other instances there is no appearance of air-bubbles from the beginning to the end of the disease. The presence of air-bubbles in the sputa has been explained, by supposing that air becomes incorporated with the mucus while it is driven up and down in the bronchial tubes during the acts of respiration and coughing ; just as if you shake a solution of soap or any other viscid fluid in a half-empty bottle, it becomes impregnated with air-bubbles. There may be some truth in this, but I think it does not sufficiently explain the presence and intimate incorporation of air with the sputa in certain affections of the lung ; and it appears to me that we can scarcely understand this, unless we suppose that the air and mucus are secreted together. You are aware that air is secreted by the bronchial mucous membrane, and that in some

cases this secretion is morbidly increased, in others morbidly diminished. Now, it is not very unreasonable to suppose that the mucous membrane may secrete air and mucus together in abnormal quantity ; and that this, rather than any mechanical agitation, may be the cause of the intimate combination of air with the expectorated fluids.

I need scarcely make any observation on the cough in influenza. It is in general very troublesome, particularly at night. Many persons are not much annoyed by it during the day, but at night it becomes very harassing, and prevents them from sleeping. When severe, it continues both night and day ; and even when persons have recovered from the fever and dyspnoea, and are able to go about, the cough will continue extremely troublesome : this I have observed in the majority of cases. In this state medicines prove of very little service, and one of the best remedies is to change to a mild country air. Cases of cough, in which I had tried every remedy without success, and which had resisted every form of treatment in the city, yielded in a few days to the salubrious influence of change of air.

In influenza, the urine is generally much loaded with lithates and super-lithates, and contains a large quantity of erythric or purpuric acid. It is red when voided, deposits a good deal of sediment, and tinges the vessel in which it lies with a pink film. It bears some resemblance to the urine which accompanies arthritic and gouty affections. In very bad cases, this state of the urine continues up to the period of death. You recollect what I stated with regard to the condition of the blood ; it is generally buffered, even where there is scarcely any febrile excitement in the system, and thus affords a very fallacious indication. The same observation holds good with respect to the state of the urine and the temperature of the skin. I may observe here that the heat of skin is very variable : it is sometimes very high, sometimes natural ; in fact, like the pulse, it falls and rises in a very remarkable manner, at certain times in the day.

I have already spoken of the affection of the mucous membrane of the bowels. I may observe, that in some cases of influenza the morbid influence is translated to the brain, and symptoms of delirium or coma supervene. Thus, in two instances communicated to me by the surgeon-general, the patients fell into a state resembling coma, during the course of the disease. In three cases witnessed by Mr. Swift, the attack of influenza terminated in a train of symptoms bearing a close analogy to delirium tremens, and requiring the use of blisters to the head and nucha, full doses of opium, purgative enemata, wine, and the occasional use of mercurials. The patients complained of great headache, noise in the ears, some intolerance of light, and more or less sleeplessness from the commencement, along with the usual pulmonary symptoms. After five or six days, they became excessively nervous, lost all sleep, had continued subsultus and tremors, and talked very inco-

herently, particularly at night. During the prevalence of the cerebral symptoms, the pulmonary affection partially or wholly disappeared, but returned again in some degree after the subsidence of the delirium. All these cases terminated favourably.

I believe I have already remarked, that many persons who have laboured under very severe pulmonary symptoms will struggle through the disease; and I may mention here that I have seen persons recover, who have suffered from continued orthopnoea for three weeks. Still the mortality, particularly among the aged, is very great; and I fear that we shall shortly have but few octogenarians to tell the occurrences of the last century. Indeed, the mortality has not been confined exclusively to the aged, for many persons in the vigour of life have sunk under the attack. There have been several deaths among the soldiers in our garrisons notwithstanding the excellent state of health which our troops generally enjoy, and the skilful and judicious treatment of our present army surgeons. The results of the medical treatment and necroscopic observations in the different regiments in London, Dublin, and Edinburgh, will form a most valuable document, and I hope it will be made public for the benefit of the whole profession.

It now remains for me to say a few words concerning treatment. First, as to bleeding. A great deal was expected from general bleeding, because the disease was sudden and violent in its onset, and accompanied by symptoms which seemed to require active measures — such as an inflammatory state of the bronchial mucous membrane, accompanied by quick pulse, hot skin, and high-coloured urine. This led persons to expect much benefit from venesection. The results, however, of its employment are, generally speaking, unsatisfactory. Where venesection was employed promptly and in the beginning of the disease, and where it seemed to be strongly indicated by the buffed and cupped state of the blood, even in such cases it has failed to afford anything like material or permanent benefit, or to produce a decided amelioration of the existing symptoms. The general impression among practitioners in Dublin at present seems to be, that bleeding is doubtful in its effects, if not altogether improper. I am much inclined to think that bleeding, unless employed within the first twelve or twenty-four hours, will be likely to do as much or more harm than good. Bleeding on the second or third day, except to relieve congestion of the lungs, seems inadmissible. The same observation holds good with reference to other diseases. Thus, in scarlatina, if you happen to be called in when the rigor commences, and while the disease is beginning to form, you will often accomplish much good by bleeding your patient; but after eighteen or twenty-four hours, when the disease is fully formed, venesection will not do. On this point I can speak from experience. In scarlatina, the difference of a few hours renders venesection inapplicable, and even injurious. It is the same thing with respect to influenza; general bleeding is useful only in the commencement, and, where the symptoms seem to demand it,

it should be employed at least within the first twenty-four hours. Where I have been fortunate enough to find the disease just commencing, I bleed to the amount of twelve or fourteen ounces, order the patient to remain in bed and take some aperient, followed by the use of nitre. In this way, by timely bleeding, aperients, sudorifics, and confinement to bed, the attack generally passes over in two or three days. I could mention many instances of the success of this plan of treatment. In one family I treated all the individuals attacked in this way, and I have done the same thing in many cases of persons somewhat advanced in life. In the case of an old gentleman, who was very severely attacked, I succeeded by these means in checking the disease at once. My experience, therefore, is, that bleeding is of service in the very commencement of the disease; but as it seldom happens that a physician is called in at this period, I would qualify my statement by saying, that, as a general measure, bleeding in influenza is seldom admissible. When you are called on to attend cases, you will most generally find that the patients have been ill for two or three days or more; and then the only mode of abstracting blood, which you can have recourse to with safety, is by leeching. About eight or ten leeches applied over the hollow of the neck, just above the sternum, and allowed to bleed pretty freely, will prove very serviceable; and if you apply them in the evening, you will often secure to your patient a good night's rest. This plan of leeching the hollow of the neck, in cases of tracheo-bronchial inflammation, is an excellent one: the leeches are applied at a spot which lies close to the trachea, and particularly to that point to which the irritation accompanying bronchitic affections is chiefly referred.

By the aid of leeching, the use of aperients, if necessary, and confinement to bed, with sudorifics, you will frequently succeed in removing the fever and bronchial inflammation. You will derive much benefit, particularly in the early stage of influenza, from tartar emetic and nitre; but I must say, that neither leeching nor tartar emetic and nitre prove as valuable and as efficacious, in influenza, as they do in ordinary bronchitis. Some of my friends who used tartar emetic as a nauseant in the commencement of the disease, inform me that they have derived benefit from its use; and others have told me that they have used tartar emetic and opium in the commencement and during the course of the disease, with advantage. I have not employed the first of these, but I have the latter, and with favourable results. You may, therefore, after using antiphlogistics for a day or two, proceed to the use of opiates in combination with tartar emetic or nitre. In some cases, the camphorated tincture of opium will answer very well; in others, you will find the acetate or muriate of morphia better. A mixture composed of six ounces of almond emulsion, a dram of nitre, and half a dram or more of the liquor muriatis morphiæ, will be found very useful. The muriate of morphia, which possesses many of the valuable properties of opium without its defects, will serve to tranquillise the system and produce sleep — two most important

points in a disease like influenza connected with increased nervous irritability. A gentleman, on whom I place much reliance, tells me that he has treated many bad cases successfully with camphor mixture, tincture of opium, and tartar emetic. I need not mention the various remedies which have been recommended in this disease — as Mindererus' spirit, Hoffman's anodyne, ipecacuanha, alone or combined with extract of conium and blue pill, and many other remedies belonging to the class of diaphoretics or expectorants. They are all more or less serviceable, but they have all the common defect of producing less relief than they usually do in cases where the pulmonary affection is simple and idiopathic. Towards the end of the disease, you find it necessary to give stimulant expectorants and light tonics — as decoction of *polygala senega*, infusion of *calumba*, &c., &c.\*

One word about blisters, before I conclude. They are useful in some cases, but in many of the severe ones they do little or no good, and only add to the patient's sufferings. They do not relieve the pulmonary symptoms, and particularly the dyspnœa, in the manner you would be prepared to expect. I do not know a more remarkable circumstance, in the present disease, than the failure of blisters; and in many cases I do not employ them at all. Fomenting the trachea and chest with very hot water appears to be much more serviceable. This has proved extremely valuable in many cases of this as well as other affections of the air-passages; and on referring to the late American journals, I find that the plan of treating croup in its onset, by means of very hot water applied with a sponge to the throat — a plan which I recommended some time ago in the Dublin Medical Journal — has been extensively employed in America, and with the most happy results. Sponging the throat and chest with water, as hot as it can be borne, has been found, in many instances, capable of arresting all the threatening symptoms of croup at once. Several cases are mentioned in the American journals, in which the lives of the little patients were evidently saved by this application. I may state, also, that not long since a child was saved in Dublin by the same means. By the advice of Mr. Smyly, who suspected the threatened attack, the child's mother had everything prepared, and by her promptitude and care arrested the disease before it had sufficient time to form.

I have nothing more at present to add on the subject of influenza; we are still much in the dark as to the best mode of giving relief — and this is the more singular, as in general the disease allows full time for the trial and operation of medical agents.

\* Doctor Blakiston strongly recommends the etherial tincture of lobelia, in large doses, repeated at short intervals, in influenza where bronchitis was present. As I had not the advantage of perusing his book during the prevalence of the epidemic, (it was not published till May,) I had no opportunity of trying this medicine in the way he suggests.

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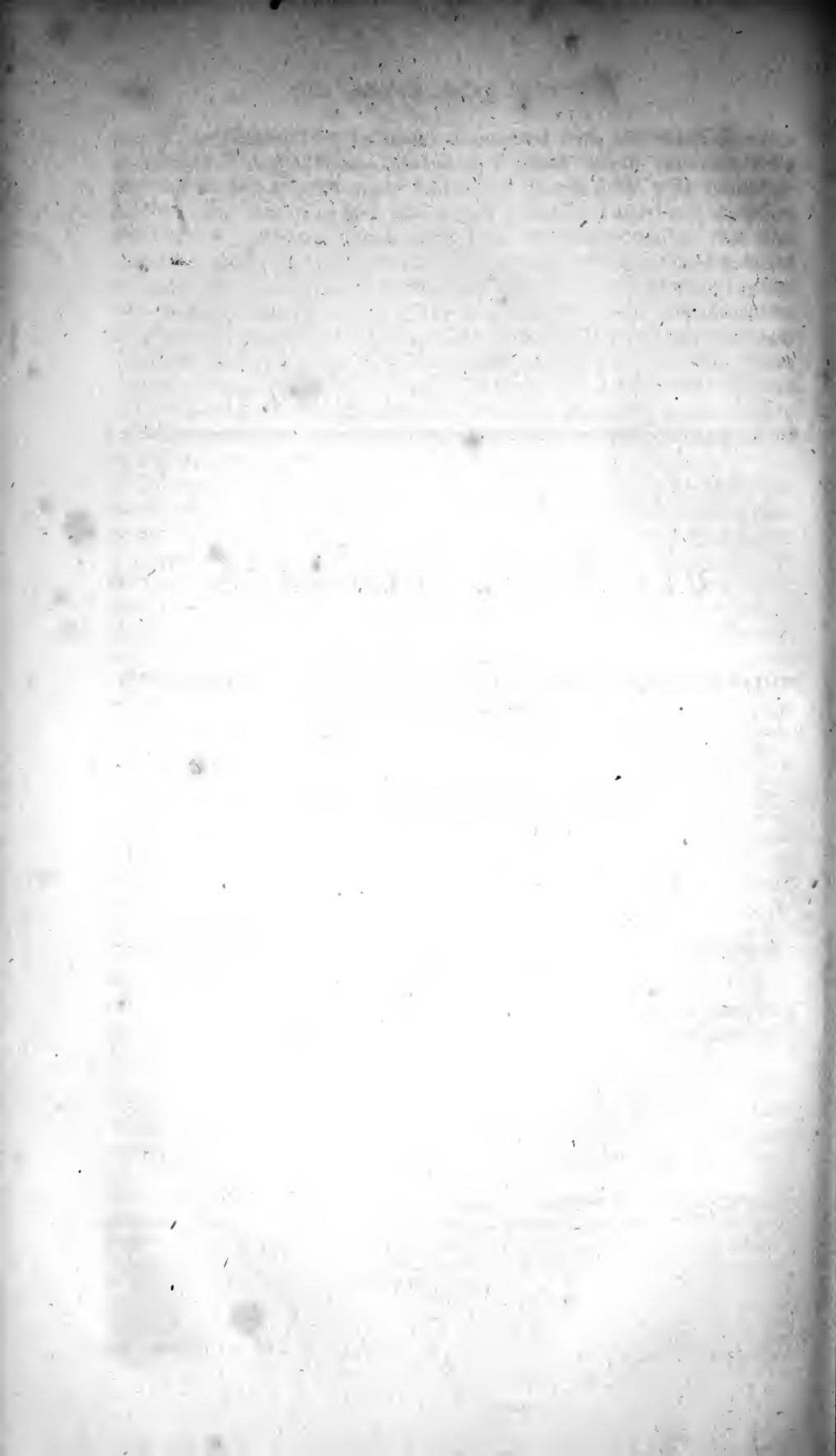
## CLINICAL LECTURES,

DELIVERED AT THE PHILADELPHIA MEDICAL INSTITUTE AND AT THE PHILADELPHIA  
HOSPITAL (BLOCKLEY),

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BY W. W. GERHARD, M.D.



# CLINICAL LECTURES.

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## LECTURE I.

Acute articular rheumatism -- Connection with inflammation of the cardiac membranes. -- Treatment, bleeding, opiates, &c.

I SHALL to-day, gentlemen, take up the subject of acute articular rheumatism, as it is especially prevalent at this season of the year, when the number of other acute diseases is very limited. In summer we have acute abdominal inflammations, and in winter affections of the pulmonary organs, while, during the spring and early summer months, serous inflammations, both of the internal and external membranes, are most common. Acute rheumatism bears some striking relations with the inflammations of internal serous membranes, from the similarity of the mode of treatment which often becomes necessary in both affections, and from the frequent complication of the latter with the former disease. In almost every severe case of rheumatism under notice, there co-exists inflammation of the covering of the heart, or of the serous membrane lining its cavities. Since this connection between the pathology of articular rheumatism and that of diseases of the heart and its membranes, has been clearly traced, the disease has attracted much interest. I say clearly traced, for the general fact had been long since pointed out, although the subject was not precisely understood. That is, it was in the same situation as many other parts of pathology; affording an indistinct view of the truth, but without that well defined character which is now required, according to the rules of rigid logic which we endeavour to apply to the study of pathology. The line of connection has only been drawn in a definite manner, for a few years past, between acute articular rheumatism, and endocarditis, or inflammation of the lining membrane of the cavities of the heart, and pericarditis, or inflammation of the membrane surrounding it. Dr. Bouillaud, of Paris, has paid particular attention to this subject; he tells us that at least one-half the acute articular rheumatic affections are complicated with pericarditis. In this estimate he is probably wrong, unless with pericarditis we are permitted to include endocarditis. A large number of mild cases doubtless run their course, without any complication of

the kind, but it is usually otherwise when the disease appears under a severe type, and we might say that many more than half the severe cases, probably two-thirds, are complicated with some inflammation of the heart. Of the other third, a large portion present signs of some functional disturbance, though not of positive inflammation. Mild cases are slow in their action upon the heart, but, in the severer forms, the advance is rapid, and disease of the heart succeeds almost immediately after the first appearance of the articular symptoms. In chronic cases, the progress of the cardiac affections is slow, and an individual not well acquainted with the disease might be deceived as to their existence.

We have thus traced two forms of the disease, and I propose bringing under your notice two cases now under treatment in the Philadelphia Hospital, to exemplify them.

The first is that of John Robb, who was admitted into the ward No. 2, on the 11th of April. Previous to his admission, he had been ill but a short time; being an inmate of the Alms-House, he was able to resort to medical assistance quite as soon as is usual in private practice. He had been working on the farm of the establishment for eight months previous to his attack, and had enjoyed good health. On the morning of the sixth, he complained of slight pains in his shoulder, but continued at work; at eleven, p. m., he was taken with severe pain in the hip, which lasted four or five hours, and then, diminishing in the hip, went to the knee. On the seventh it ceased in the right knee and attacked the left.

Now from the character of the affection, thus shown, we can, without going farther, make our diagnosis. I allude to its metastatic character, as exhibited in its leaving one joint and settling in another. This is almost distinctive of rheumatism.

There was no pain in the ankles, but there was slight pain near the toe. You here mark the course of the disease onwards; it has reached the toe, and shows a disposition to attack the whole foot. There had been pain in the right wrist, from an hour before the man's entrance into the hospital. On the ninth and tenth, he had pain in the breast, which he referred to a spot below the praecordia, in the region of the diaphragm, and which lasted twenty-four hours, and was increased by coughing. Such pain is usually owing to disease of the heart, which may be merely muscular, but it is more frequently caused by inflammation of the serous membranes lining or covering the heart.

This man had been exposed to no causes of disease other than those which he was in the habit of encountering. He had, it is true, been wet while working on the farm, but this was not uncommon with him: he had been long accustomed to working in the rain. This shows how cautious we should be in admitting causes of disease; some physicians might be disposed to attribute the attack of rheumatism to the last wetting, which could manifestly exercise no greater influence upon the man than a series of previous exposures to the same cause, of no recent occurrence. I look

upon the particular season of the year as the principal excitant of the disease, and it is for this reason that I have thought it a fitting subject to bring before you at the opening of my course. If you take the trouble to inquire, you will find that at this time the prevalence of rheumatism and rheumatic pains is remarkable. But an accidental exposure will often develope what might otherwise have remained dormant, and thus the disease, like many others, must be referred to two different causes, a general and an accidental one. The influence of the former is in this case much greater than that of the latter.

The case before you being of an acute character, its previous history is not nearly so important as the present state of the individual. It is otherwise in chronic affections, in which the whole anterior history is all-important.

The condition of the patient at the time of his admission on the eleventh, was as follows. The face was slightly flushed, and presented an expression of pain. This pain, in acute rheumatism, is remarkable; it usually prevents all exercise and confines the patient to bed.

There was slight soreness in the shoulder, but without swelling or heat; no pain or swelling in the left arm, slight soreness in the right elbow, and severe pain, swelling, and heat in the wrist. The same pain, swelling, and heat extended to all the joints of the hand and fingers, excepting the thumb. There was some pain in both knees, especially in the left; none in the ankles; a little in the right hip, no tenderness of the spine, no cephalalgia; tenderness on pressure along the region of the ribs; this was probably the remains of the diaphragmatic pleurisy. The impulse of the heart was feeble, the second sound nearly lost, the first much roughened, dulness on percussion nearly natural. Treatment, one grain of opium every four hours. The digestive organs were healthy.

Now, let us analyze this case. The first fact worth recollecting is the absence of tenderness of the spine. This establishes the diagnosis between simple rheumatism and that which is allied to neuralgia. Hence, the mode of treatment which proves so excellent in the latter affection may here fail. The state of the heart indicated merely slight valvular disease, and some muscular impediment; there was no effusion, the dulness on purcussion being natural, and no creaking sound being heard.

The treatment in this case was after a plan of practice in New England, from which quarter it has been lately strongly recommended; the internal administration of opiates, pushed till felt by the patient.

During the twelfth, six-grain pills of opium were exhibited, but there was no diminution of pain. Neither sleep nor cephalalgia had been induced by the opium. This is an important therapeutic point, demonstrating the antagonising action which pain exerts in regard to the effects of opium. The first sound of the heart was still rough, but the impulse rather less; no increase of flatness.

The state of the heart was, therefore, slightly improved. Pulse eighty-four, of moderate size and regular; a grain of opium was ordered every two hours, and a laxative enema administered.

On the evening of this day there was some cephalgia, although no deviation of the pupils from the natural state. The dose of opium was diminished to a grain every three hours. Sleep was interrupted by twinges of pain; sweating at night. Eruption of sudamina; pulse seventy-two; pain in right arm increased and extending to the shoulder. Less pain and swelling in the knees, but increase of both in the feet. The action of the heart was more regular and feeble, and the sound less rough. The disease, you perceive, was not in any manner arrested, although you note a decided improvement in the condition of the heart. There was costiveness from the opium, but this, you will soon see, disappeared. Same prescription of opium continued during the thirteenth; hop poultices to most of the painful joints; laxative enema.

On the fourteenth, the pain having diminished throughout the right arm, began in the left hand and wrist. Here is another point of interest; the translation of the pain from the right to the left limb by metastasis. This is a common thing in articular rheumatism, and, as in this case, the pain does not usually quite cease in one joint before it begins in the other.

There was slight pain between the shoulders, and diminution of the pain in the knees and feet; pulse seventy-six, fuller and regular; this is somewhat an exception to its usual condition in the disease, it being generally frequent, small, and tense. Skin warm and dry; sleep very irregular; tongue moist, with a yellowish coat; appetite bad; thirst; three or four stools since the enema; the opium had, therefore, induced no costiveness. No cephalgia or dizziness; slight flush; eyes natural. Opium continued, hop poultice and laudanum to the left wrist.

On the fifteenth, the left hand was worse, and there was pain in the sole of the right foot. The other pains were better, moisture rather than sweating. Opium continued.

The sixteenth, less expression of pain, and less flush; soreness in both shoulders, with slight swelling, but not much constant pain. Slight soreness of the left elbow; much swelling, pain, and heat of the left hand; right hand nearly free from swelling, still slightly painful, but motion returned; pains much diminished in the legs; pain at the ensiform cartilage; palpitations frequent after slight exertions; pulse seventy-two, and soft; decided roughness, almost rasping, in the first sound of the heart, which was not very loud, and heard most distinctly to the left of the nipple, second sound nearly lost. Under the sternum, both sounds of the right side distinctly heard and clear, the first only a little roughened. The praecordial dulness commenced only at the left margin of the sternum, and extended to the nipple. The morbid alteration was, therefore, confined to the left side of the heart, implicating the valves; there was besides effusion into the pericardium. The opium

pills were continued during yesterday and last night every three hours. Hop poultices.

Last night the pupils were somewhat contracted, and little sensible to the light. To-day the face was flushed, and presented an expression of stupor. Disposition to sleep; pupils rather large; no cephalalgia; sleep interrupted by pain, shooting from the swollen joints. Pulse eighty-eight — softer. Swelling less marked in the left hand. Slight swelling and pain in both knees. No pain in the breast. Impulse of the heart almost lost; both sounds very feeble, without roughness. The disease of the valves is therefore diminished. Percussion slightly dull at the upper portion of the left side; flat, down from the third rib to the same extent as yesterday. Prominence obviously increased. These latter signs are explained by the increased effusion into the pericardium. Still slight diarrhoea; three or four stools in the twenty-four hours. Skin moist, without sweating. A grain of opium every four hours.

This case, gentlemen, of acute disease of the heart, occurring in the course and as a direct consequence of acute articular rheumatism, may serve as a type of the affection, which I shall now make the subject of some general remarks, and have occasion to refer to hereafter. There are several peculiarities to be alluded to. In the first place, the changeable character of the affection, shifting, as you have seen it, from joint to joint, denotes the nature of the disease. This is well understood, and universally admitted. But I would have you remark, that there was no *metastasis* to the heart. The disease of the heart appeared, during the most acute stage of the rheumatic fever, which afterwards continued with unabated severity. This is almost always the case: cases of metastasis are quite exceptional, and the cardiac inflammation is not only most frequent but is also most severe during the height of the articular inflammation. By physical examination, we ascertained that the pain in the praecordial region proceeded, first, from disease of the valves, indicated by the roughness of the sound; secondly, from effusion, shown by the unnatural dulness on percussion, imperfect action of the heart, &c.

Another symptom to be noticed is the sweating, which was very slight from the first or second day, although it is generally very profuse in acute rheumatism. It is this sweating in rheumatism which has suggested the employment of Dover's powder, and other sudorifics, in its treatment. In this case opium was alone resorted to, to afford a better test of the powers of the remedy.

The diarrhoea is another feature worth remarking, co-existing, as it did, with the large doses of opium. It was a purely accidental complication, but its occurrence demonstrates that opium, in very large doses, continued for some time, and given much in the same way as the large doses of tartar emetic are by the contra-stimulants, does not produce the same effects as in ordinary doses, thus illustrating a therapeutic law, that remedies, in over-doses, do not act upon the system in the same manner as when administered in the

usual quantities. Were it not for this law patients would die from the action of certain remedies now frequently prescribed. How could tartar emetic be given in the high doses required by the contra-stimulant practice in pneumonia, or calomel, as it is prescribed in the diseases of certain sections of our country?

The pathology of the disease under consideration is still very obscure, although its symptoms are well understood. How much of the disease is allied to neuralgia, or connected with an affection of the nervous system, and how much belongs to local inflammation, are points that are still unsettled. It is, in this respect, analogous to hooping-cough, and some other diseases. We are also embarrassed as to effectual curative means for arresting the progress of the affection, though we have any number of palliatives. For the present I refrain from entering largely into the pathology of rheumatism, but shall consider it partly as nervous and partly as inflammatory in its character. Certain inflammations of internal organs which occur in rheumatism, such as pericarditis, lose this mixed character, and become decided phlegmasiae; they are accordingly treated without reference to the disease of the joints. When the complication of pericarditis proves fatal, and the opportunity, otherwise rare, of examining persons who die with rheumatism, is obtained, there is often almost a total absence of lesion in the joints; but the pericarditis offers the same anatomical lesions, as if it had been induced by exposure to cold, or injury, or some other ordinary cause. The affection of the joints depends so much on a nervous cause, that it presents very slight traces of inflammation. It seldom or never terminates in suppuration, or the other usual terminations of inflammation. Dr. Chomel states, that pus is not found in rheumatic joints; the very rare cases in which it is met with, he considers to be mere accidental complications. This opinion, if somewhat modified, is probably the correct one; that is, rheumatic differs from ordinary inflammation in the absence of pus, and its want of fixedness of position; but ordinary local inflammation may ensue and constitute a complication. Not so with the accompanying internal inflammations; they result in the secretion of pus, and effusion of lymph, and are fixed in their location.

If the pathology of the disease is obscure, equally so is the therapeutics, it being more than doubtful whether we possess any settled or absolute method of treatment. This subject is very clear, no doubt, to some authors; but, unfortunately, practitioners generally are in the dark. Thus Bouillaud, who regards the affection as merely inflammatory, depletes to the utmost possible extent; and for this exaggerated depletory practice claims great success. His success may have been great, but others who have followed the practice, perhaps without the same enthusiastic confidence, have not been so fortunate. I have given the practice a very fair trial, with every disposition to see it succeed, and, although I have afforded relief by one or two moderate bleedings, if persisted in, the result was unfavourable; if pericarditis were present, it was only par-

tially relieved, while the rheumatic affection of the muscular substance of the heart often increased. Besides, the ulterior results of excessive bloodletting are generally mischievous. We thus merely return to the old practice of one or two bleedings at the commencement of the affection; a practice, the utility of which is sanctioned by long experience.

Another practice, originating, I believe, in New England, and recommended by Dr. Webb, of Providence, is that which has been followed in the present case — consisting in the administration of very large doses of opium. I have tried it in two cases, in both of which it failed. It succeeded in stupifying the patient, and rendered him less sensible of pain, but produced no decided impression on the disease. It did not prevent the change of place, nor did it remove the pain or swelling. These symptoms persisted, and retained their usual mutability of character. Last summer, I pushed the remedy to such an extent as to induce decided narcotism, yet I failed to cut short the disease. The remedy may occasionally obtain the success which is claimed for it, but it is clearly no specific.

Sudorifics constitute the treatment adopted by some, from a notion that artificial sweating is but an imitation of the curative process of nature. This is certainly not the case; for the sweating is often profuse, while the violence of the disease is persisting. If, however, the discharge be suppressed, from cold or any other cause, it will be proper to resort to sudorifics, to revive this natural secretion, and restore to the patient what he has been deprived of; for in such cases the suppression of sweat is certainly productive of harm, and increases the suffering of the patient.

Other remedies have been recommended, as narcotics and purgatives, particularly the colchicum, and, what is analogous to it, the veratria. The colchicum is used in this country and in England, but is not much employed in France. It is very useful as a palliative, though far from being absolutely curative. I have seen it stop the severer symptoms of the disease, for as much as five or six successive days, without curing the disorder. I often use it at the hospital without other medicines, preferring, as I do, the administration of simple remedies, particularly in hospital practice, to insure their accuracy of administration, and to enable us to judge of their effects. By giving the wine of the roots or seeds, alone, we may avoid the severe purgation resulting from Scudamore's mixture; but purging may be of service, if the patient can readily bear the motion necessary for the evacuation of the bowels. But the disadvantage attending frequent rising is apt to more than destroy the good arising from the revulsive effects of the purging. In medicine, as well as in surgery, inflamed parts must be kept at rest.

In general, however, it is better to combine the colchicum with some opiate, as laudanum or black drop; in doses of half a drachm of the wine of the seeds, or even more if tolerated by the patient, and ten to twenty drops of laudanum every two, three, or four hours. The preparations of colchicum are so irregular in strength

that it is very difficult to state these with precision. A slight impression upon the stomach and bowels is the best guide.

These views, as to the effects of remedial agents in rheumatism differ but little from those of Dr. Chomel, who, perhaps, has more than a due share of scepticism in relation to therapeutics. It is true, however, that when diseases, after running a certain course, get well of themselves, they are apt to deceive us as to the value of the remedies employed in treating them. This, I think, is the case with Drs. Bouillaud and Webb. For the opinions of the former of these physicians on this subject, I refer you to Bell's Select Medical Library (1837); and for Dr. Webb's, to the Boston Medical and Surgical Journal, for last year.

I am not disposed to enter into a history of all the different forms of treatment which have been recommended in rheumatism. Of external applications, cups to the spine, as a counter-irritant, is a most valuable palliative; and, if the neuralgic element of the disease predominate, cupping along the spine will sometimes produce a real arrest of rheumatism. But when the joints are the principal seat of the disease, in most cases much is not to be expected from cups or leeches to the spine; they do better near the joints. Other applications to the parts are directed for the benefit of moisture and warmth. For this purpose, anodyne poultices are useful; none is better than one of hops, steeped in hot water, or vinegar and water, sprinkled with a little laudanum. These are very convenient applications, but cannot be accommodated to all the joints. Opiate frictions may be used, such as a mixture of warm oil and laudanum. I refrain from lead-water, or spirituous, or other stimulating embrocations, as the danger of the internal affection, endocarditis, or pericarditis, is somewhat increased by driving the affection from the joint. This practice must be reserved for the sub-acute variety of the disease.

Other local applications of a soothing character may be resorted to, such as the experience of every practitioner will suggest. In the North, there are other remedies, the virtues of which are much extolled, such as the green hellebore, *actaea racemosa*, &c. These plants have been tried here, but without the success which is claimed for them. This want of success may depend on our obtaining them only in the dry state, in which their virtues are impaired. But I cannot believe that this is the sole cause of failure; for the most decided action of the remedies will sometimes be produced without curing the rheumatism.

Though not immediately dangerous, few affections are ultimately more mischievous than acute rheumatism. Diseases of the heart are so apt to originate with it, and to continue after its cessation, that we must hail any plan of treatment likely to exercise a curative influence over it. I have therefore tested the opiate practice, as the last which has been recommended, watching very carefully its effects. I certainly pushed it as far as was prudent; I was not warranted in giving more than one grain every two hours, particu-

larly as I could not see the patient after each dose, a precaution which is always advisable when giving high doses of opium.

In other cases of the disease, I am willing to try other modes of treatment which are highly recommended, although I fear that they are all merely palliative, and as such only may do good; at last, we may find some one more efficacious than the others. I am doubtful as to the immediate success, though strong in hope. I cannot help agreeing with Chomel, sceptical as he is generally, in believing inflammatory rheumatism an affection not to be cut short by remedies, after having seen so much protracted suffering from it; even in the case of physicians themselves, treated under the most favourable circumstances, it has been prolonged to four or five weeks and upwards.

What is the natural duration of acute rheumatism? It is not precisely fixed, but is scarcely ever less than two weeks, and may last for five or six months; at least, the immediate effects may continue so long. Like most diseases that run a determined course, it averages two or three weeks.

Although I do not believe that in most cases it can be suddenly cut short after the pain and swelling of the joints are considerable, yet an appropriate treatment is useful as a palliative, and diminishes the mischievous results. In a few words, the treatment which I would recommend consists in one or two general bleedings, opiates combined with tartarized antimony or colchicum, and if the pain be very severe, local depletion is useful for those joints which are nearly in the state of ordinary acute or chronic inflammation. Purgings and other remedies are directed when specially indicated. This of course is a mere outline of treatment, which requires frequent modification.

Of the second patient whom I mentioned, my time will allow me to say little or nothing. He offers signs of disease of the heart different from those of the last, chronic dilatation and slight hypertrophy, without disease of the valves, the sounds not being at all roughened. There is effusion into the pericardium, indicated by increased dulness on percussion. Further details I reserve for another occasion.

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## LECTURE II.

Continuation of acute rheumatism. — Rubeola, or measles, in adults and children —  
Symptoms — Complications — Treatment.

I WILL again call your attention to the case of the man Robb, who was under notice as the subject to *acute articular rheumatism*. The opiate practice had been carried out with decided but gradual improvement. Yesterday, however, there was a return of the affection, but under a much less severe type, marking the stage following

the acute form of the disease, in which the symptoms are swelling and mere soreness, rather than pain or heat. With the reappearance of the affection in this modified shape, the impulse of the heart, which had been increasing, has been for two days much diminished. There is at present an effusion of about a pint of liquid into the pericardium. The dulness on percussion is so manifest as to leave no doubt of this fact. It is not from the simple presence of unusual dulness, that we draw our conclusion, but because we have seen this dulness notably increase, from day to day, since the patient has been under inspection. A prominence of the chest over the region of the heart has also appeared, in a marked manner, during this time. Another proof of the effusion is the absence of the impulse of the heart, which is next to nothing. You recollect the roughness of the two sounds of the heart, particularly the first; this roughness has diminished as effusion has gone on. In proportion, then, as the pericarditis advanced towards secretion, have the signs of endocarditis become less evident. This fact, which exemplifies a general rule of pathology, is worth recollecting. Of pericarditis the physical signs are, mainly, the increase of prominence and dulness, with faintness of the impulse of the heart, while endocarditis is to be recognised by increased action of the organ, and the roughened sound, sometimes amounting to that termed rasping. The physical signs of these two affections, particularly of pericarditis, are exceedingly easy of recognition, so much so, that, knowing what they are, you will hardly fail to detect them. The two diseases are not likely, I have told you, to exist together under an equally severe type. The same thing is true of pleurisy and pneumonia; they may co-exist, but very severe pleurisy and pneumonia do not go together. If, for example, the pleurisy be aggravated, by the compression of the lung it impedes the development of acute inflammation. The law of pathology, founded on the two cases I have adduced, you will find generally to hold good. I shall here conclude my remarks on the case of rheumatism: the opiate practice was continued till yesterday, when it was modified by the substitution of a single dose of Dover's powder at night, in place of the opium pills.

It is my intention in this course of lectures, gentlemen, to take up the various acute diseases in succession, as they come before our notice, at the hospital, preserving, as far as possible, the natural connection amongst them. A very unusual affection in general hospital practice has lately claimed your attention, I mean *rubeola*. To see it pervading epidemically the wards of adults is a phenomenon which I have never before witnessed, and hardly expect again to observe; as it is a disease which usually appears but once during life, and is generally confined to childhood. During the last six weeks, however, there have been as many as seven or eight cases in my single service, and three or four in the other wards. My recent cases were as follows:

Morris, a man of nearly forty; Perry, a lad of eighteen, and three others of nearly the same age.

Previous to detailing the symptoms which characterise rubeola, I shall make a few remarks on its pathology. The pathology of measles, like that of other exanthematous affections, is to be divided into two parts, one comprising the morbid changes in the body, which are characteristic of and essential to the disease, the other being those which are merely accidental. The first are of course to be looked on as pathognomonic.

The description of the affection given by Sydenham is so good, and agrees so accurately with its appearance at the present day, that I shall read it to you at length, and adopt it, in most particulars, in preference to modern accounts. It cannot be amended materially, except by examining the symptoms with the aid of the numerical method; a task which, at present, I am not able to undertake.\*

This excellent description of Sydenham's shows his powers of observation in favourable contrast with some of modern times. His general account of the disease holds good in the cases which we observed at the hospital. Thus, our symptoms of the first day, like his, were chilliness and cold shiverings. The second day we had the catarrhal symptoms, connected with coryza and the flow of tears, as described by Sydenham. This is the best sign to distinguish measles in its incipient stage from other exanthemata. In this stage, the other exanthematous affections offer no mark by which they can be diagnosticated with any certainty. They have, at this time, numerous symptoms in common, including some belonging to other febrile diseases. Thus, in scarlatina, the sore throat is by no means sufficiently characteristic, and small-pox may, at its commencement, be very readily mistaken for typhoid fever. Dr. Louis, who certainly is most accurately familiar with typhoid fever, has more than once mistaken for it the incubation of small-pox.

The symptoms that follow, as the sick stomach, loss of appetite, slight cough, heaviness of the head and eyes, occur now just as they did in the time of Sydenham. The only irregularity in Sydenham's description consists in the large red wheals, which have not, in our cases, made their appearance, nor have I often observed them. The swelling of the eyelids continues the same. The vomiting occurs particularly in children, and not in adults; we did not notice it in these cases. Looseness of the bowels is the next symptom mentioned. This is not now a constant symptom in the early stages of measles, but, it is to be recollected, that the descriptive account of the disease by Sydenham has reference to an epidemic which took place in 1670. The diarrhoea I set down as an accidental symptom, and, as such, it probably complicated the epidemic of that year, just as it does in our time those of other seasons.

\* It was then read.

We next pass to his description of the eruption, which he characterises most accurately. We have it now as then, appearing first in the form of red spots, resembling flea-bites, which gradually coalesce into semicircular, crescentic, and circular shapes, showing themselves first on the face, and spreading thence over the rest of the body. As the eruption increases, there is a diminution of the other symptoms. The eruption is found in the mouth and throat, as well as on the skin. In the case of negroes, it is of course detected only in the eyes and throat. In the pharynx and palate, as elsewhere, the eruption is not so much elevated above the epithelium, as it is above the surface of the skin. The next part of the description is doubtful — that is, the mode of disappearance of the eruption. It does not totally disappear on the eighth or ninth day, as alleged by Sydenham, for traces of it remain for some time afterwards, in copper-coloured spots, as shown in the cases in our wards; even after the spots entirely disappear the skin remains rough and dry. I do not at this time intend to go more largely into the ordinary symptoms of measles, for I can scarcely add anything to the graphic description which I have read to you from Sydenham. While at Paris, and at the Hospital des Enfans Malades, I collected a mass of observations on this subject; but not yet having been able to analyze them, I must defer presenting them to you to some future time. I shall now call your attention to two of the accidental symptoms which may complicate the regular course of measles, and often become the sources of great danger.

The first is bronchitis of a severe character. A slight bronchitis may be looked upon as a necessary symptom of the disease; it is to be deemed accidental when it appears under an aggravated type, or when the inflammation runs into the parenchyma of the lungs, and takes on the form of lobular pneumonia, which is similar to the pneumonia following the bronchitis of young children. This accidental symptom occurred in the man Morris, whom you recollect in the first ward, about the eighth or ninth day, when the eruption was fading, and our attention was directed to the development of moist rhonchi on the right side of the chest, showing the existence of severe bronchitis, with considerable dulness on the middle and posterior part, and some on the anterior region of the left side — a common seat of lobular pneumonia in measles. Instead of getting well, the man has remained ill, exemplifying the general rule, that, when lobular pneumonia is developed, after the subsidence of the eruption, it lasts for a considerable length of time. The signs, by which its appearance is to be detected, are dulness on percussion, with a sub-crepitant rhonchus, and a slightly bronchial respiration. In place of attacking the mass of the lung, and rendering it solid, the inflammation appears in the isolated lobules, leaving amongst them portions of the lung still permeable to the air, which prevent the development of loud bronchial respiration. The respiration, in the very early stages of the disorder, and in the portion of the lungs which are not inflamed, is not lost, but rendered louder, and roughened.

In the case of the boy Perry, the pneumonia appeared on the eleventh day of the disease, after the eruption had entirely subsided, no traces of it being left but a few copper-coloured spots. His right lung was attacked, as is commonly the case; perhaps, from its greater size, and from the circumstances of the patient's lying upon the right side. The lower, and not the middle and upper lobes, was attacked; in this respect as well as in others, it is like ordinary pneumonia, but differs from it in the loudness and looseness of the crepitus, which ceases in regular inflammatory pneumonia as soon as the entire substance of the lungs becomes solidified. In the boy's case, as in that of Morris, convalescence has been very slowly established, and is yet by no means perfect; he is still lingering in a somewhat critical condition. In the case of Morris, I entertained, for a time, some fear of the existence of tubercles, the development of which is thought to follow attacks of measles: I say, is thought, for I am by no means certain that there is any necessary connection between the two affections.

The treatment proper to meet this complication of measles is necessarily various. At the Hospital des Enfants Malades, during my residence, local depletion by cups and leeches was largely employed by Dr. Guersent. But the debility, consequent on this mode of treatment, was favourable to the reproduction of the disease in other parts of the lungs, especially as the pneumonia was observed almost invariably in children of feeble constitution. The proper rule for the employment of bleeding leeches, is to confine them to cases in which there is excessive dyspnoea, and a rapid extension of the pneumonia is going on. It extends through the lung most rapidly, in stout, robust children, and in them leeching does good. In the ordinary lobular pneumonia, as well as in that which follows measles, after one or two cuppings, the best treatment consists in small doses of ipecacuanha. By persevering with this remedy, until the expectoration, or rather the secretion, (for with children there is no expectoration, as they swallow the discharge,) is freer, the patient is relieved, and we may then complete the cure, by the exhibition of tonics and a generous diet. Above all, attention is to be directed to position. If the child lie constantly on its back, the development of pneumonia is almost certain. It must, therefore, be moved frequently from one side to the other, and be from time to time raised in bed or carried about. In addition to ipecacuanha in expectorant doses, the sulphate of quinine and some preparation of iron, in small quantities, may be given, combined with a generous diet, if the child should become feeble, and the quantity of red blood should diminish. You will find, that in my lectures, gentlemen, I am not at all disposed to insist on too rigid a diet. I have seen so much mischief result from the continued enforcement of a rigid diet, in accordance with the mode of practice which was prevalent in France a few years ago, that it is with great caution, and no little reluctance, that I venture upon it, except for a short period. In some of the wards of the Enfants Malades, the practice was to

place the children on a rigid diet, and the results were certainly far from favourable.

In the cases under notice, by pursuing the practice indicated, we have, in a great measure, succeeded in getting rid of the accidental symptoms. But there is still some cough, and other traces of lingering bronchitis. What is now the proper treatment? It should be principally hygienic. The patients are to go freely into the open air, taking internally, at the same time, some of the milder tonics.

The next accidental symptom, likely to complicate the course of measles, is severe diarrhœa, near to the close or after the termination of the disease. At the Enfans Malades, the children died in two ways when measles proved fatal, of lobular pneumonia, during the active period of the affection, and of diarrhœa, at the end of it. The lobular pneumonia usually showed itself about the sixth day, the bronchitis appearing much earlier; but the diarrhœa does not usually come on until the eruption is almost over and desquamation was taking place. If this diarrhœa be but slight, no danger need be apprehended from it, and we rather avoid much interference with it. Indeed, it is generally looked upon as a safeguard to the child, and is, therefore, suffered to run on. But I do not consider the diarrhœa as slight and not to be checked, if it exceed four, five, or six stools, during the day, and continue until it is accompanied by emaciation of the child, with paleness and dryness of skin. This variety of consecutive diarrhœa depends commonly upon a particular state of the mucous membranes, in which they are pale and soft, seeming to be acted on by the altered fluids in the body, and instead of being themselves the seat of very active disease. I showed you the other day, at an autopsy, a similar state of the mucous membrane, but occurring in the stomach; in this case, however, it was probably produced by the action of the fluids after death. This state of the mucous membranes, as it occurs in measles, I do not regard as an effect of inflammation, nor is it to be treated as such. Depletion, of any sort, here does no good, nor do remedies specially directed to the bowels always prove of much service. You must act on the skin until its functions are restored, and for this purpose nothing is better than the sulphur bath, made by dissolving the sulphuret of potassa in water. I have seen children recover, at the Enfans Malades, under this treatment with astonishing rapidity. It not only relieves the particular symptom to which it is addressed, but much improves the general condition of the patient. Indeed, it was remarked by Jadeot, that the same remedy, employed for the management of itch, not only cured that affection, but besides left the patient in a general state of health and embonpoint. If the sulphur bath cannot be administered, one of warm salt water may be substituted. In addition to this treatment, adapted to the skin, slight opiates may be resorted to, with small doses of ipecacuanha, and astringents, which are supposed by some to act chemically upon the bowels. But depletion, by leeches or

cups, must be abstained from, and the diet should be nutritious, but of a nature to leave little residue for the colon.

The last variety of accidental lesion, which occurs during measles, is acute diarrhœa during the height of the affection. This complication I have not witnessed during the epidemic at the hospital, though it was a very frequent occurrence at the Enfans Malades, in 1832, which was just before the cessation of the Asiatic cholera at Paris. That epidemic of measles was probably similar in its character to one described by Sydenham. The disorder is dependent on acute inflammation of the colon, and shows itself at the most intense period of the eruption; it is attended, generally, with the usual symptoms of dysentery, considerable pain, stools small in quantity containing slime, sometimes patches of false membrane, and blood; in fact, we have a regular attack of acute dysentery, complicating the measles. The complication is, I believe, most apt to occur in the summer months of the year. That is, measles are subject to the general rule of pathology, which determines the nature of the accidental symptoms, attending self-limited diseases. Thus, in the typhus fever, which was epidemic here during 1836, and part of 1837, we had, during the winter, symptoms of the acute affections most usual in winter, as those of the chest, and, in summer, it was complicated with diseases which are endemic in hot weather, as dysentery and disorders of the alimentary canal. Neither of these accidental affections was in any manner a necessary accompaniment to the typhus. The complications of measles follow the same rule, except that, both the inflammations of the lungs and the bowels are more frequent than in typhus fever; we have, in other words, very generally lobular pneumonia occurring in the measles of winter and early spring, and affections of the alimentary canal when the epidemic takes place in the summer months, particularly July and August.

The post mortem appearances, in this affection, differ from those of ordinary diarrhœa. If closely examined, the colon and rectum are found to be covered with patches of lymph, and their mucous membrane is much disorganized, and of a violet tint, as in severe dysentery. So universal were these appearances on dissection, during the epidemic at the Enfans Malades, to which I have just alluded, that a gentleman, who was observing it, thought that he had discovered a new law of pathology, and that there was a constant connection between rubeola and inflammation of the colon. He was, however, mistaken, and from his error we may see the importance of observing with care the phenomena of several epidemics, and of again and again repeating these observations, before we allow ourselves to make from them any general deductions.

The treatment at the Enfans Malades for the dysenteric symptoms was the same that is employed in ordinary dysentery. It was attended with no great success, but it must be remembered that severe dysentery is at all times a difficult affection to treat. The

remedies, however, should certainly be the same when dysentery forms the complication of which we have been speaking as in the common variety where it is the primary disorder. In the early stage we must have recourse to antiphlogistics, used with some freedom, by leeches and cups to the region of the colon and the anus. The dysentery differs essentially, as I have before said, from the diarrhoea occurring at the close of measles, and we have no fears here about the propriety of an energetic antiphlogistic treatment; it affords prompt and great relief. We may afterwards administer opiates in very small quantities, and moderate doses of ipecacuanha. Calomel is so rarely employed in France, that I never saw it prescribed in those cases, and have not been able to test its efficacy in this affection frequently enough to speak of the advantages of using it. The after management of the dysentery of measles is also much the same as of common dysentery, except that the former will be found to be of greater obstinacy than the latter usually is.

From these details, then, we deduce the following corollary. In measles, as in other diseases of known duration, we have one constant set of symptoms, as the eruption, and febrile movement with anorexia, thirst, restlessness, &c.; and next, a series of accidental symptoms, which extend from the slight bronchitis, necessary to the affection, to severe bronchitis and lobular pneumonia, and from the slight attendant diarrhoea, to diarrhoea of the sub-acute form, and severe inflammatory dysentery. It is to these accidental symptoms that you are to pay particular attention; and by doing so, I am persuaded you will much diminish the mortality of measles, which depends, as in typhus fever and small-pox, mainly on the severity of the accidental complications.

There remain to be noticed some varieties of measles, not observed here in the late epidemic. The first variety occurs in the other exanthemata, and consists in an imperfect development of the eruption. This is not so frequent in measles as in scarlatina; but we have occasionally coryza, a flow of water from the eyes, and cough, with but a very slight eruption, or one that is confined to the face. This is still a genuine, although an anomalous form of measles.

The second variety consists in the severe complication of internal inflammation with the eruption, which disappears soon after the beginning of the disease, and may be looked upon as suppressed. You then have universal bronchitis, the whole mucous membrane being affected with inflammation of an intense character, instead of the usual slight blush. We have then a grave internal affection, occasioned by the want of action on the surface of the body, the disease being, as it were, concentrated in the internal organs. This variety is always attended with great danger. It is to be treated by active counter-irritation of the skin, to supply the place of the absent eruption; for this purpose, sinapisms, the warm bath, and the like remedies are to be resorted to.

The third variety is the black measles, or rubeola nigra. This is not a real variety. It occurs in feeble children, in whom the blood is in a dissolved state, as from scurvy; or it may depend on the sudden

development of lobular pneumonia, preventing the proper decarbonization of the blood in the lungs, and giving it a general dark tint.

These varieties are almost the only ones that you will meet with in practice, and on which it is therefore proper to dwell. Rubeola sine catarrho I have never seen — I scarcely believe in its existence. Some change in the bronchial mucous membrane is always to be detected ; there is a dry rhonchus indicating a thickening of it, or we have at least some traces of a moist secretion. Cough is not a necessary attendant upon a slight bronchitis, and it is impossible to decide with certainty upon its non-existence without a very careful examination, and I suspect it is the absence of close observation that has given rise to the variety of rubeola sine catarrho.

I have presented to you to-day but few clinical illustrations, as I was desirous of giving you a somewhat detailed descriptive notice of measles, a disease of frequent occurrence, and which now prevails epidemically. I have insisted particularly upon the importance of the accidental symptoms which are most frequent, for although other organs, as the brain and the wind-pipe are sometimes the seat of grave lesions, they are not usually so much affected as the thoracic and abdominal viscera. There is another complication which is not rare in some epidemics, that is, the gangrenous sore mouth of children, of which I shall treat at a future time.

Measles is perhaps a more frequent cause of after ill health than any of the other exanthemata. The bad effects of small-pox and scarlatina are usually confined to the course of the disease ; they destroy life at this period or soon after. But measles, though less dangerous during the eruption, may leave behind it greater organic lesions than either of the others. The effects of lobular pneumonia and diarrhoea are not easily got rid of ; and, after a supposed convalescence from measles, we but too often see our little patients wasting away from emaciation, and after a lapse of a few months, perishing from the consequence of one or other of these dangerous complications, or from tubercles in the lungs, the lymphatic glands, or the follicles of the intestines.

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### LECTURE III.

Inflammations of serous membranes — Pathological anatomy — General symptoms. —  
Pleurisy. — Tuberculous peritonitis, etc.

In my lectures on pathological anatomy I have already pointed out to you the distinctive characters of the inflammations of the serous membranes. As you, no doubt, remember, these characters consist in the bright arterial injection of the membrane, and the secretion into its cavity of lymph, serum and pus. The lymph

is secreted very early; I once detected it in a case of pneumothorax which proved fatal in an hour after the perforation: at first it is secreted in the form of minute points scattered thickly over the inflamed surface; as these points become more numerous, they gradually run together, until the whole surface is covered by a tolerably uniform coating of lymph, which is then called a false membrane. Portions of the lymph are afterwards detected in flakes interspersed through the serum. The liquid consists chiefly of serum, which is slightly turbid from the admixture of lymph, and of a small portion of pus, which gives it a yellowish tinge. The pus is not abundant in acute inflammations, and in subjects of a feeble constitution is scarcely perceptible; but when the inflammation becomes chronic the proportion of pus gradually becomes more considerable, until it at last forms the whole of the liquid. It is then called an empyema when formed in the pleura.

The manner in which the gradual absorption of the liquid occurs, and the two surfaces of lymph become organized, and finally adhere together, must also have become so familiar to you as to require no further description at present.

Serous inflammations may be either primary or secondary. When secondary, they are usually dependent, first, on the previous existence of inflammatory rheumatism, secondly, on disease of the organs which they invest, and thirdly, on the existence of a tuberculous diathesis. I shall not now dwell upon the rheumatic causes of serous inflammation, as I entered into this subject, at a former lecture, when speaking of a case of acute articular rheumatism in which pericarditis occurred. Its connection, too, with disease of the parenchymatous tissues covered by serous membranes, we shall discuss at length, on some future occasion, when we may see that inflammation of the lungs, liver, that, in fact, every lesion of an organ, gives rise to more or less inflammation of its serous covering. This process is an effort of nature to isolate and protect the diseased organ. The third cause of serous inflammation, that is, the existence of a tubercular diathesis, is the most complicated, and presents the most numerous points for examination: into some of these we shall enter this afternoon. The connection between serous inflammation and tubercles is the more important, from its enabling us to recognise a number of tubercular cases, otherwise obscure, by reasoning upon the law of pathology, that tubercles are so often connected with inflammation of these membranes.

In addition to those above mentioned, there may be other causes of secondary serous inflammation; they may be mechanical, as perforations, outward violence by blows, and the like, and the influence of cold which may be felt in the membrane surrounding the joints, intestines, lungs and heart, producing a primary inflammation.

That secondary serous inflammations are not of much more frequent occurrence than they are, is to me a matter of surprise, when I reflect upon the close connection of the organs with their serous

investment; at all events, they are comparatively of more importance than the primary forms, from their greater fatality.

There are certain signs common to serous and other inflammations, by which they are generally ushered in. These are chill, fever, and sweating, with a general malaise, or feeling of wretchedness, loss of appetite, thirst, and in fact the ordinary febrile symptoms. They may, however, be entirely absent, and I have seen patients die of acute peritonitis without either fever, thirst, or severe pain. The pain accompanying serous inflammation is usually sufficiently indicative of its character. It may be said to be specific, being lancinating, sharp, acute, resembling such as would be inflicted by the stab of a knife. It is ordinarily described by patients in these terms; it may, however, be so slight as not to confine the patient to bed, in fact, not severe enough to enable him to localize the disease. Patients often come into the ward, with the general febrile symptoms above mentioned, without local suffering enough to allow them to fix the particular seat of their disease. It is obvious, then, that we cannot trust to the character of pain, in determining the nature of the affection, but must resort to physical examination, the phenomena of which, resulting from the identity of the liquid secreted, will be always the same.

There is, besides, a disordered action of the organ invested by the serous membrane; in pericarditis of the heart, in pleurisy, of the lungs, and in peritonitis, although not so distinctly marked as in other inflammations, there is generally sufficient evidence of disturbance in the action of the bowels.

The state of the pulse is another sign, supposed to be especially characteristic of this disease. But you recollect that, in the case of the man Robb, the pulse was merely moderately frequent, seventy-six per minute, notwithstanding the pericardium was inflamed; and, in another patient, labouring also under intense serous inflammation, you noticed also that it was very nearly of the same frequency, that is, decidedly not febrile. The character of the pulse is, therefore, a faithless sign of the existence of serous inflammation; it may be peculiar, small, wiry, and of intense activity, in which case bleeding is demanded without delay; but these distinctive features are not always present.

In the patient noticed to-day, the pleurisy was nearly, though not entirely, latent. The woman, whose case was before you, had neither pain nor fever, although there was an effusion into the pleura of a quart and more in amount. The signs of this effusion were merely physical. This latent pleurisy is a common affection with old people, many of whom perish from it, when supposed to die simply from the decay of old age. In young persons these diseases are not so often latent, except in a very chronic form, or where the patient has been exhausted by previous illness. An example of this was furnished by the case that terminated yesterday fatally at the hospital. It occurred in a patient, who had been labouring under chronic peritonitis for a year previously, and who was taken about

a week since with a slight increase of his ordinary pain, accompanied by severe prostration, which carried him off in a few days. An exception to this rule, however, occurred at the Pennsylvania Hospital three years since in the case of a man who was run over upon the belly by a cart. He suffered but little pain, from the first day, and was afterwards suddenly carried off, although the only alarming symptom was extreme exhaustion. Very extensive peritonitis existed, but without pain, although the intestines were covered with lymph. You see, therefore, how difficult it is to recognise the presence of serous inflammations, from the functional signs which are presented. If we had no other means of examination, or if we omitted physical exploration, because there were no special symptoms to arrest and direct our attention, we should be constantly in error. For example, it is a very common occurrence with labouring men, suffering from chronic effusions into the pleuræ, to complain of pain, not in the region of the pleura, but lower down, in the flanks, whence they are sometimes treated merely for lumbago. In such cases, there is absolutely no rational symptom to indicate the nature of the disease and the proper mode of treatment; it is by the local signs only that the true character of the affection can be traced.

The duration of serous inflammations is by no means fixed. It may be divided into two periods, the one including the time that passes during the increase of the effusion; the other, that during its stationary and declining stage. After effusion has taken place, it is not possible to cure the patient abruptly; time is absolutely required for the consolidation of the false membrane, and for the absorption of the pus and serum that have been secreted. In all acute inflammations of serous membranes, if you see the case only after effusion has taken place, you may safely predict that your patient will not be well, at least, for several days; and the rapidity of the recovery will depend upon the quantity of liquid which has been effused, and the time it has remained in the pleura. But, if you are called to a case, say of pleurisy, at the beginning of the attack, while there is merely slight inflammation without much effusion, the patient may get well abruptly, and the morbid secretion may be limited to a little lymph, which is a necessary consequence of all serous inflammations.

I do not intend now to enter at length into the peculiarities of treatment, nor into a detail of the physical signs, belonging to the varieties of serous inflammations, except so far as they may be exemplified by the cases which I shall bring before your notice. The remarks which I have just now made were necessary in order to make clear a number of cases, the histories of which I shall presently relate to you. You must bear in mind the distinction which I made between primary and secondary serous inflammations. The first of these is rarely fatal, except in the brain or heart; by inference, you may shorten its course, but you expect it to get well under any circumstances. Inflammations of this character depend merely on

atmospheric vicissitudes or other such cause, and are not preceded by a tubercular lesion, or connected with this diathesis, nor are they the result of a perforation, which is generally irremediable. When you have a secondary serous inflammation, you are to look upon it in most cases as an effort of nature for the preservation of the part; and when it is complicated with inflammation of the parenchyma of the organ which it invests, it is a curative and preservative process, and is not to be interfered with, unless it is of that severe character which endangers the life of the patient.

The first illustration, which I shall bring before you to-day, is the termination of the case of the man Robb. At the last lecture, I mentioned to you that the rheumatism was almost cured. The affection of the heart was then, and is still, persisting, although it is now chiefly limited to the internal membrane of the heart, and the symptoms are still so severe as to prevent the man's yet leaving his bed — a proof of the difficulty of suddenly arresting diseases of this nature. These cases of serous inflammation, occurring during an attack of rheumatism, generally assume a character altogether independent of the course of the latter affection: the great fire goes out, but the smaller burns slowly on. Not only, indeed, does this cardiac inflammation run its course, but it often leaves behind it organic changes in the heart, that may last for a succession of years, or for life, in the form of thickening of the valves, or adhesion of the laminae of the pericardium. Numerous cases of extensive disease of the heart take their origin in an attack of rheumatism; they may, on the other hand, be of a slight character, and entail no greater disturbance of the economy than slight palpitations, and an inability to use the same amount of active exercise as in perfect health.\*

The next case I shall notice is somewhat curious; it is pleurisy, occurring in a young Irishwoman, Isabella M'Gargee. In December, 1837, she was exposed to great fatigue, and suffered much mental anxiety during the illness of a relative; she was then taken ill with severe pain in the region of the heart, dyspnoea and palpitation; for these symptoms she was bled and blistered with relief. Her health, however, was not entirely restored; there was still palpitation, at times cough and some oppression. At the beginning of April, she worked very hard in a damp cellar, washing clothes, and was seized, in a day or two afterwards, with fever and pain in the right side, extending from the breast towards the nipple, and much increased by respiration, or by the cough, which was short

\* This patient was perfectly cured by rest, some local depletion, and a blister; his cure was absolute, for three years after he was engaged in very laborious work without the slightest disagreeable feeling about the heart, or any abnormal sound. In most cases I use depletion more freely, but from the general aspect of this case I was induced to resort to bleeding of any kind in a very moderate degree, and the result was extremely favourable. It should be remembered that there was little pain and no febrile excitement. These afforded the chief reasons for abstaining from much active treatment.

and dry, not frequent. There was also pain caused by lying on the affected side, with considerable oppression. The gradual increase of these symptoms obliged the patient to enter the hospital. There was no oedema of the limbs, and but moderate palpitation; there was no important previous treatment, and the patient was not strictly confined to her bed.

We now inquire if the disease can here be recognised at the first glance, from the detail of symptoms gathered from the patient. It cannot. Let us enter into an examination of the symptoms. In the first place, can the affection be neuralgia? It has some points of resemblance with this disease, but it differs from it in many particulars which are sufficiently well marked. First, it is not common for any considerable degree of cough to exist in neuralgia, nor have we in it a steady, local pain, as in the case described. Another set of symptoms, which establishes the difference between the two affections, is that belonging to the countenance, the medical physiognomy of the case. This is characteristic, not of neuralgia, but of an intense pectoral disturbance.

Satisfying ourselves that it is not neuralgia, we make a general diagnosis of an acute disease of the chest, first, from the severity of the dyspnoea present, established by the spasmodic contraction of the chest and of the nostrils; and, secondly, by the alteration in the colour of the countenance, in the dark blue tinge of the lips and flush of the cheeks. This is not purple enough for the existence of pneumonia, and we, therefore, infer, that our case is, probably, one of bronchitis, pleurisy, or acute phthisis.

Having carried our examination thus far, let us proceed to discriminate between the affections, to which we have reduced the case. This can be done only by physical exploration, without which it is impossible to recognise with absolute certainty the distinctive features of the disease. What, then, are the physical signs which establish the character of the affection before us? First, we have an abnormal development of one side of the chest, at the lower part, and diminishing gradually in ascending. This, at once, settles satisfactorily the nature of the affection; it is a pleurisy. Had the development been confined to the anterior part of the chest, it might have been emphysema, or, had it been local, pericarditis; but only a pleuritic effusion could have made it what it was. Next, we have immobility of the ribs: in the present case this could result only from pain, from distension, or from old adhesions. The history of the case disproves the probability of the existence of old adhesions on the right side; so that from the pain, then, we again deduce the presence of acute pleurisy.

Continuing the examination, we next proceed to percussion, which yielded the following results. There was flatness in the lower posterior half of the side of the thorax, and of the lower third on the anterior part; as well as of the lower half of the axilla. Thus far, we can diagnosticate, with certainty, the existence of pleurisy; the flatness followed the line of gravity, or, in other words, corresponded

with the situation of the liquid, which, following the ordinary laws of liquids, accumulated in the bottom of the chest, just as if it had been contained in a common bag.

We continued the examination by auscultation. Had the disease been pneumonia, we should have had bronchial respiration and a dry crepitus. This was not the case, as the lung was quite permeable to the air, and not a hard, solid mass. There was no rhonchus, for there was no liquid in the bronchial tubes. The physical signs, then, have led us to a certain conclusion as to the nature of the affection. In many cases of pleurisy, when the lung is more condensed, we have, however, a bronchial respiration, but no crepitus, unless complicated with pneumonia.

The next question that presents itself is, as to the primary or consecutive character of the disease. To solve this question we entered upon an examination by auscultation of the other side of the chest; there was, here, no evidence of the existence of tubercles, in any great numbers, but, from the fact of there being some dulness of percussion, there was reason to suspect their presence, though not to determine it with any certainty. Besides, from the circumstance of the mutability of the situation of the pain, as there had been, you know, a previous attack on the other side of the chest, the existence of tubercles was rendered probable. It is a law of pathology, that, if a pleurisy appear on one side of the chest, and some time afterwards show itself on the other, it, in all likelihood, is dependent on the presence of tubercles. This law of the double pleurisy, as it is called, was discovered by Dr. Louis, and, in most cases, may be relied on with certainty. I infer, then, that, in this case, the pleurisy was probably tubercular.

Besides the suspicion of tubercles as a predisposing cause of pleurisy, the patient is labouring under an undoubted disease of the heart. It began during the acute inflammation of the early part of the winter, when the pericardium was involved at the same time with the pleura. As a consequence of that inflammation, we have hypertrophy and dilatation of the heart.

The treatment of this patient has been active; she was bled to sixteen ounces, was cupped, and has since taken tartarized antimony and digitalis. Under these remedies, with rest and restricted diet, she is rapidly improving.

The remedy here used, tartar emetic, is found to answer perfectly well in the management of pleurisy. It increases the sweating, and promotes absorption directly; the digitalis has a similar action through the medium of the kidneys. In pleurisy, when the inflammation is circumscribed, local depletion is the best treatment. This acts very promptly in serous inflammations, although it has but slight influence over the inflammations of parenchymatous structures. In the latter case relief is afforded only in proportion to the quantity of blood abstracted, while in pleurisy it is in proportion to the nearness of the point of abstraction to the seat of pain. The pain is relieved, also, by the application of warmth

to the part, by poultices and fomentations. These, however, are not to be withdrawn suddenly, or without the substitution of a thick pad of carded cotton or wadding; otherwise they only do harm, by the alternation of heat and cold which takes place. The advantages of these local applications cannot be too highly estimated. I often rely more upon them than upon more powerful remedies, which, if they relieve pain, at the same time diminish the strength.

The treatment of ordinary simple pleurisy is not a very complicated affair. And I would remark, that every case, in which there is no positive evidence of a change in the functions of nutrition, even though there may be strong ground of suspicion of a tuberculous or other chronic disease, is to be regarded in the treatment as a simple pleurisy. The treatment of Dr. Louis, which I do not, however, follow in all cases, consists in small bleedings, combined with the internal administration of tartar emetic, nitre, digitalis, and diuretics. Of sixty cases that I saw him treat, he lost not one. It may be inferred, that is an effectual plan of treatment for simple pleurisy. I may add, that, in a simple case, if effusion take place, you need not be very uneasy, if it is slow to absorb, provided the case is otherwise proceeding well.

Of the remedies, by which chronic pleurisy is to be managed, (meaning, by chronic pleurisy, cases of more than a month's duration,) I shall not now treat in full, giving you merely a general summary of them. Blisters, which, in the early periods of acute pleurisy, are not often necessary, and do harm twice for once that they do good, are of signal service in chronic pleurisy, scarcely ever doing mischief, and often affecting a rapid absorption of the liquid effused. They are to be applied not once, but repeatedly. Under their influence, absorption sometimes takes place, with astonishing quickness: indeed, it seems, in a few instances, as if the fluid was directly poured out from the interior of the chest to the blistered surface by a sort of endosmosis. Mercurials, in small doses, are not much used by the French, either alone, or in combination with squills and digitalis. But in cases approaching in character to hydrothorax, great advantage will be derived from a treatment with calomel, squills, and digitalis, or the simple action of the mercurials alone, either pushed to ptyalism, or nearly so, will be found very powerful, both in the advanced stages of the acute and in nearly every period of chronic pleurisy. Even an obvious but slight tuberculous complication does not always forbid the use of mercury in these cases. In addition to treatment by medicines; travelling, a sea voyage, distractions, a simple change of place, will be of much service. The importance of travelling is greatest in those cases in which we fear the complication of a tuberculous diathesis. Whether there be already formed tubercles in the lung, or merely the constitutional tendency to these affections, I am quite sure that by this means and by attention to other hygienic circumstances, patients are often preserved from a threatened consumption.

In addition to the case illustrative of one of the most simple serous inflammations, I shall say a few words respecting another case, in which pleurisy occurred, as a well marked complication. The case was one of pneumonia, consecutive upon tubercles, the existence of which was known by unequivocal signs at the upper part of the lung. There was something, however, engrafted on the pneumonia. This was pleurisy, which was detected by a sign which often occurs in the later stage of the affection, and is then pathognomonic, the bruit de frottement, a sound caused by the friction of the surfaces of the pleura, lined with false membrane, upon each other. It resembles the sound produced by the rubbing of leather or India rubber, and is the same grating sound that was heard over the heart of the man Robb, but in the present case it is produced by respiration, and is synchronous with it. It is, also, fugitive in its character, and disappears when the membranes become consolidated.

I shall conclude with one other case, which terminated fatally a few days since, demonstrative of one of the causes of serous inflammations, the details and phenomena of which will serve as a key for future investigations. It was a case of chronic tubercular peritonitis. My reasons for this diagnosis were based upon the conformation of the abdomen, which was irregularly distended with gas, upon the existence of lancinating, gripping pains, or alternations of costiveness and looseness of the bowels, and upon the pain caused by motion, or the distension consequent upon eating; there was, besides, nausea and vomiting. The peritonitis occurred here without any obvious cause, and was, therefore, not primary. For there is a law of the economy that chronic peritonitis is nearly always, particularly in young persons, dependent on the presence of tubercles. In addition to this general law of pathology, the great alteration in the nutritive functions made the diagnosis of the development of tubercles much more certain. It was, at first, doubtful, from the large distension of the abdomen from serum; but the water here was soon absorbed, and there was no recurrence of ascites. There was evidence also of tubercles in the lungs, although not very decidedly marked. Had there been no physical signs of phthisis the case would have been still positive, but we found a sufficient number of signs for the local diagnosis of tubercles.

Most commonly, tubercles appear in the lungs of adults before they are deposited in other parts of the body; but, in this instance, the application of this general law failed. The patient, some days before his death, was seized with sudden prostration, under which he rapidly sank, and with some increase of the abdominal pain.

After death, the following appearances were discovered. There was effusion of serum and pus into the abdomen; in the upper portion there was merely serum and lymph, and, in the lower, the intestines were agglutinated by false membranes perfectly organized, not vascular, but there was red injection in the upper part from a more recent inflammation. The cause of this difference was perforation of the intestines from tuberculous ulceration of the glands of Peyer,

two of which had ulcerated through all the coats of the intestine into the peritoneum. The pathology of these perforations is the following:—A tubercular follicle in the intestine enlarges and softens, and is discharged into the calibre of the gut. The ulcer left does not heal, and, passing into the chronic state, advances towards the serous covering of the intestine, which is sometimes destroyed. The peritoneal inflammation is only an attempt of nature to preserve life by preventing the discharge of faecal matter into the peritoneum. It fails, because the mischief done is too considerable to admit of reparation.

In the lungs, the only evidence of the presence of tubercles were half-a-dozen gray granulations, that could be felt, but scarcely seen; while, in the peritoneum as well as in the intestines, they existed to such an extent as to cause disorganization. This disease is unusually rare among negroes; indeed, it is sometimes called consumption of the negroes, in the southern parts of our country. It rarely attacks adult males, more commonly females, and is very prevalent with children, in whom it forms one of the diseases known as tabes mesenterica, although the mesenteric glands are not invariably affected.

To recapitulate my remarks of to-day:—Serous inflammations may appear as primary and secondary. When primary, they are not dangerous, except in the brain; but they are so when secondary, because complicated with some previous lesion, and occurring in exhausted subjects. They are to be treated, in both instances, on pretty much the same principles, by depletion, and acting on the skin with alteratives in the more chronic stages. If excessive pain exist narcotics may be used to relieve it, with the topical applications you may see every day employed at the hospital.

For the proper study of tuberculous diseases, gentlemen, a knowledge of the pathology of serous membranes is indispensable. Previous, then, to entering upon the examination of the former affections, I have introduced the subject of serous inflammations to facilitate our future investigations. The study of tuberculous diseases is not, as you have also seen, to be confined to the chest, but to be extended to all the organs of the body, as you will more fully learn at a later period.

The tuberculous affection of the abdomen, which has been under consideration to-day, though not the most common form of the disease in our latitudes, is one of the most prevalent in southern climates, and is on that account the more interesting to many of you.

## LECTURE IV.

Acute inflammations of the membranes of the heart.—Pericarditis.—Endocarditis.\*

DURING the past summer I have very frequently alluded to the inflammations of the membranes of the heart. It has so happened that we have had a very unusual number of these diseases; you have seen more cases of the kind within the past six months than I have observed within the last two or three years, and it is very improbable that you will again witness so many cases of these affections, in the same short space of time. The serous inflammations have been almost endemic in our city, and, if we except a moderate proportion of bowel affections, they have constituted the prevailing diseases of this period.

It was for this reason that I commenced the course with acute rheumatism, and then passed on to the consideration of the serous inflammations so closely connected with it. Amongst these, the subject of the membranous inflammations of the heart was accidentally introduced; but I did not then point out to you the numerous interesting questions arising from the study of these inflammations, which you will find of difficult diagnosis, unless you are thoroughly acquainted with their pathology and with the means of physical exploration. Without the aid of the physical signs of the disease, the inflammations of the heart cannot be recognised, except in a very small proportion of cases. You have had a recent illustration of this fact: a patient, whose case I shall presently detail you, has been evidently labouring under pericarditis of considerable intensity; the effusion of lymph and serum occurred, as it were, under our own eyes, and you were able to trace the gradual consolidation of the lymph, when adhesions began to form between the two surfaces of the pericardium, yet the patient complained of no pain whatever in the chest, and no uneasiness other than that caused by the rheumatic inflammation of the joints which preceded the pericarditis. In but two or three cases was the pain sufficiently considerable to induce us to suspect the occurrence of any affection of the heart; one of these cases, attended with pain and the best marked, was that of Robb, which I mentioned when speaking of inflammatory rheumatism. He suffered some pain, but it was usually inconsiderable, until his entire recovery. The other two were blacks, who were affected with inflammation of both membranes of the heart, and recovered, but died afterwards of a consecutive dropsy. These latter patients had recovered entirely of the cardiac affection, and, in all probability, would not have fallen

\* This lecture was given some months after the preceding.

victims to the dropsy had they not both laboured under a cancerous disease.

When you examine more fully the history of the cases, you will find the other rational signs equally obscure; I can affirm that the obscurity was not owing to a want of appreciation of these signs, for I examined the cases in your presence with the most scrupulous accuracy, and you can bear witness to the precautions taken to elicit every practicable symptom in the case. The inflammations of the heart are, therefore, to a great degree, latent, and you must commence their study, with the conviction that their diagnosis is impossible, in a large proportion of cases, without a thorough knowledge of their pathology and a sufficient acquaintance with the physical signs of disease. But if this knowledge be possessed, and some of you have already attained it, there is no part of medicine more perfectly demonstrative in its character, or which is governed by more unvarying laws, as to the progress and termination of these diseases.

I will now relate to you some of these cases, and we can compare them together to ascertain how far these remarks are confirmed or invalidated by your own observation. At all events you have been eye-witnesses of the facts which I detail to you, and the circumstances of the cases will, therefore, be more completely impressed upon your mind, and will carry with them a force of conviction and a clearness of detail, which could never result from a purely didactic lecture.

The first case I shall give you is that of a patient, now convalescing in our wards from pericarditis, nearly uncomplicated with inflammation of the internal membrane of the heart. It occurred, as is most commonly the case, during an attack of acute inflammatory rheumatism, and had just appeared when the patient came under your observation. The following symptoms were dictated in your presence:—

“ David Dargan, aged thirty-eight, a lime-burner, accustomed to drink freely, entered my ward September the 2d. On the 28th of August, after drinking rather more freely than usual, he was taken with convulsions and became slightly deranged; he was bled, returned for a short time to consciousness, and again became incapable of recollection. On the 29th he was stupid and could answer no questions; the stupor was unaccompanied by distortion or active delirium. No muttering; no return of convulsions. Digestive functions good. He was cupped freely to the nucha twice; pediluvia were applied; he took nitre and the effervescing mixture, and was purged. In two days he recovered his intellect, but not entirely his memory. Consciousness not quite perfect until the 2d. On his return to consciousness, he had pains in both legs, hands, and shoulders, with swelling. From the 1st to the 2d there was increase of pain and heat, and on the 2d there was redness. No œdema or palpitations. There was intense cephalalgia, which was relieved by cupping. For the last three or four years he had flut-

tering of the heart after exercise, and was short-breathed at the same time. This began after an illness of seven months duration, the result of intermittent fever. He had rheumatism ten years ago, after being exposed to rain, and two or three times before, but merely local in the shoulders, not confining him to bed. He recollects no other illness, never had syphilis. At the beginning of the pains, on the 28th, had a severe chill, but none after.

" His condition, on the 2d, was as follows; swelling, heat, and pain in the ankles and feet; slight swelling of the knees; and redness and swelling of the hands in nearly all the joints. Some pain, but no swelling, in both shoulders, but none in the elbows. Pulse ninety, full, nearly regular. Tongue moist and natural. Appetite good; no nausea; stools regular. Skin generally warm, scarcely moist. Both sounds of the heart heard in the whole praecordial region, varying, but never perfectly natural. The first sound more or less roughened, the second heard distinctly, rather sharp: between the two, or rather at the commencement of the second, was heard a very evident bruit de frottement, which could be detected over the whole praecordial region, but was most distinct over the left margin of the sternum, more marked in the erect than in the recumbent posture. Impulse of the heart increased and irregular. Percussion dull from the right margin of the sternum to the nipple, and from the fourth rib downwards. No pain, no dyspnœa, almost no cough, no uneasiness on percussion. Spinal tenderness from the seventh dorsal vertebra to the fifth cervical, more severe on the spine than on the adjoining parts. Cups were ordered to the whole length of the spine, with a sixth of a grain of tartar emetic and opium each, every two hours, and low diet.

" On the 3d, there was great alleviation of the rheumatic symptoms. No cough or pain across the chest; no palpitation. Creaking sound in the praecordial region more distinct than on the 2d, extending over the whole region, and synchronous with the diastole, varying in intensity and tone. Impulse of the heart diminished, more diffused. Sounds much less loud, and both heard distinctly, the first less rough than on the 2d. Prominence rather greater. Percussion dull to an inch and a half beyond the nipple, thence to right margin of the sternum. Respiration posteriorly, vesicular throughout the chest, resonance of the voice doubtful; opium and tartar emetic continued, twice the quantity of the former, with cups to the praecordia.

" On the 4th the pain and swelling were rather less, but there was great weakness, which may have been owing to the tartar emetic. Other symptoms better. Eight ounces of blood had been taken from the chest, by the cups. Percussion now quite clear within the nipple, dulness extending merely an inch and a quarter from mid-sternum. Sounds of the heart much louder, the first offering only a moderate bruit de soufflet; the second, near the point of the sternum almost replaced by a simple creaking sound, which prolonged itself also into the first, but less distinctly; heard

all over the heart, less towards its left margin, very loud along its whole sternal region, at times giving a musical tone. When the patient was erect, the impulse of the heart was stronger, creaking more frequent, converted into an incessant grating. Eight ounces of blood were again taken from the praecordia by cups, and the opium and tartar emetic continued.

"On the 5th, the pain was less severe in the hands, more so in the shoulders and muscular parts of the arms; soreness in the muscles of the thighs, less in the feet; increase of swelling and puffiness in the knees, but not of pain and swelling. No spinal tenderness, cough, or oppression; sleep disturbed by pain; prominence greater than yesterday; percussion clear, however, except for an inch and a half at the point of the sternum; impulse of the heart greater, clearer, sharper; first sound diminished, grating much less distinct, heard chiefly at the point of the sternum. On sitting up, the action of the heart was stronger, the grating much more distinct, heard under the same circumstances as before; three stools since last evening; when he took half a grain of ipecacuanha and five grains of Dover's powder, twice. To-day, five grains of Dover's powders, four times a day, and cups to the spine.

"On the 6th, no swelling in the knees, almost no soreness, less of both in the feet, none in the left hand, almost none in the right; soreness and swelling in the shoulders not diminished; no soreness of the back or breast. Pulse ninety-two, regular, and softer. Sweating profuse, no chilliness. First sound of the heart very short and faint. Second, loud, masked by the creaking sound. Percussion duller, to an inch within the nipple; impulse rather stronger. Cups between the shoulders, and Dover's powder continued.

"On the 7th, countenance gay; shoulders better; no swelling of the hands, almost no stiffness; knees natural; very slight swelling in the ankles, with a little pain in the right. No spinal tenderness. (Has been cupped four times; twice to praecordia, eight ounces, each time; twice to spine, six ounces; twice cupped, before his entrance, to the nucha, seven ounces; and had been bled from the arm.) Pulse quick, regular, ninety-five. No prominence in the praecordia. Percussion perfectly clear. Dulness very incomplete everywhere. Impulse of the heart more clear; first sound prolonged; creaking in the second limited to the point of the sternum, disappearing when he rises. Sweating profuse, constant. Urine rather increased. No chills. Dover's powder continued; hop poultice to the feet.

"On the 8th, soreness almost ceased in the feet, a little effusion in the knees, but no increase of pain; slight soreness in the points of both shoulders. Pulse one hundred and eight, thrilling, regular. Sweating continues. Impulse of the heart much stronger, first sound nearly natural, a little prolonged; bruit du cuir so faint at the beginning of the second that it would have seemed doubtful,

if not previously heard. Treatment continued with cups between the shoulders.

" On the 9th, has pain only in the knees and hips; less in the shoulders since the cupping. Sweating still continues. Pulse one hundred and two, quick, thrilling, and resisting. Appetite good; no nausea; three or four stools daily. Respiration now heard over the whole praecordial region; impulse stronger, creaking quite decided in the second sound; first still blowing, less than last evening, when the pulse rose ten to fifteen beats. Dry cups were applied to knees last evening with relief to the pain. Treatment continued.

" On the 11th, no pain in the hands; some cephalalgia. Pupils a little contracted. Some wrinkling of forehead. Expression anxious. Pulse one hundred, full, thrilling, softer than yesterday. Slight subsultus; talking in sleep, says he is accustomed to it when well; sweating continues; five stools in the twenty-four hours; legs restored to motion, almost no swelling; stiffness of right shoulder and arm, including elbow; slight of left; feels no uneasiness in the chest; a little soreness apparently in the pectoral muscle of both sides; first sound of the heart and impulse natural; creaking scarcely heard; (has taken no medicine in the last twenty-four hours,) four ounces of wine in whey, and an assafœtida plaster to the epigastrium.

" 12th. Last evening, about seven o'clock, had more tremor, more subsultus, countenance the same; took four ounces of the assafœtida mixture, every two hours. Enema of twenty drops of laudanum. Slept well during the night, awoke once or twice only. Pulse ninety-six, full, soft; pains not increased. Soreness felt now only in the shoulder joints. Bruit de soufflet harsher than yesterday; a little rasping, creaking indistinct; second sound very clear. Percussion nearly as before, a little less clear; assafœtida mixture continued; wine omitted: full diet.

" 13th. Muttering during sleep; pain less; two stools in twenty-four hours. Impulse of the heart louder and clearer; both sounds louder, particularly second, which is still a little blowing, still subsultus; sweating. Pulse ninety-two, feeble, regular; continue assafœtida.

" 17th. Still has pain in legs and arms; drowsiness constant; no subsultus; intellect quite clear. Pulse one hundred, regular, small; motion returned to every joint, but some stiffness in shoulders and knees; sweating abundant. Both sounds of heart heard; creaking not ceased; more diffuse, less loud. Dulness of percussion not increased. Chamomile tea.

" 18th. Sitting up; no pain except slight in shoulders and knees; sounds of heart natural, except slight creaking in second. Convalescence confirmed.

" 19th. Perfectly free from pain, except when moving; then suffers from soreness of limbs; skin cool, pleasant; appetite good; sounds of the heart clear; creaking barely perceptible.

"20th. Continues well; remains a few days longer to confirm his convalescence."

When you examine the history and progress of this case, you will see upon what facts the diagnosis of pericarditis is based. We must then examine other cases which have terminated fatally, in order to test the correctness of the laws of diagnosis, which I shall lay down. We have, fortunately, lost no patient in the present course, during the continuance of the pericarditis; but we shall be able to obtain the necessary evidence from an examination of those cases which terminated fatally of some accidental disease after the termination of the pericarditis, and we then can compare those cases with others that have terminated unfavourably at a previous period.\*

The signs of pericarditis in one patient varied according to the stage of the disease. During the period of effusion, which had already begun when the patient came under our observation, five or six days after the commencement of the rheumatism, we had the physical signs of pericarditis, which are clearly described by Dr. Louis. That is, flatness on percussion to a much greater extent and to a more considerable degree than occurs in a healthy subject, decided prominence of the praecordial region, which was distended and raised up by the liquid, and dulness of the sounds of the heart and feebleness of impulse. Now, these signs become the more characteristic from their constant variation; the quantity of liquid scarcely remained the same for two consecutive days, and you, therefore, found the signs of the disease to increase during the time that it advanced, while they diminished very rapidly when the pericarditis declined. Had the dulness and the prominence of the praecordial region been permanent, the case could still have been recognised, but there might have remained some room for doubt; for chronic enlargement of the heart, particularly if complicated with effusions of serum into the pericardium, resembles a case of pericarditis in its physical signs. The resemblance ceases when you watch the case for several consecutive days.

There was another sign indicative of pericarditis, which also served to point out to you the variety and stage of the disease. It was the sound produced by the rubbing together of the two surfaces of the pericardium covered with lymph. This sound occurs during the systole and diastole of the heart, especially the latter, it was, therefore, most evident during the second sound of the heart which occurs during its dilation. This new sound was so loud as, in some measure, to conceal the natural second sound of the heart, which was, however, never entirely destroyed, but could always be detected by a practised ear, as it were, combined with the new adventitious sound. The second cardiac sound was not lost, because it depends on valvular contraction, and the valves of the heart remained nearly in the normal state; now, had the disease

\* Some cases of this kind were then mentioned.

been complicated with much inflammation of the internal membrane, as was the case with the man Robb, to which I have previously alluded, the motion of the valves would no longer have remained free, and we should have found either that the second sound was altogether lost, or much changed from its natural character. The cause of the grating sound is nearly the same in inflammation of the pericardium and of the pleuræ; that is, in both cases it arises from the friction of two surfaces of serous membranes more or less coated with lymph; it is not precisely similar in the two cases, because the quick action of the heart differs greatly from the slow gradual movement of the lungs in the act of respiration. The grating sound of pericarditis, therefore, is more sharp and quick, but less loud and prolonged than that of pleurisy. It is useless to describe this sound to you, for you have heard it for yourselves, which answers better than any description; those who have not heard it, may readily distinguish it by its creaking, like the sound produced by rubbing together two pieces of moist leather, whence it has been sometimes called the "bruit de cuir," or leather sound; a trivial name, which is by no means so expressive as that of rubbing or grating sound. It cannot be recognised by one not previously acquainted with the natural sounds of the heart, with which the slighter shades of this adventitious sound may be confounded. You could distinguish it readily in the present instance by a careful analysis of the sounds when you found that the sharp clear tone of the second sound was more or less obscured by this rasping sound extending over the whole anterior surface of the heart, especially at its middle portion. There is but little difficulty in distinguishing the grating sound of pericarditis from the rasping sound caused by thickening or vegetations upon the valves; the latter is more frequent in the systole, is always heard most distinctly at the region of the valves, and is not attended with a sensation of glowing, which is quite perceptible to the touch in most cases of pericarditis. When there is but little effusion the grating sound is more important as a sign, for there is this very dulness on percussion and no prominence.

As the lymph became consolidated, the grating sound gradually declined, but it has not yet disappeared, although the patient is now in full convalescence. Nor do you generally find that this sound will disappear quickly; for, if the lymph form prominences on the surface of the heart, it may remain for several months, at least until it is so far absorbed as no longer to present rough projections for the grating of the two surfaces together.

The sounds of the heart, properly so called, were both distinguishable throughout the whole of this case; they were somewhat feeble, had lost a little of their natural clearness and seemed distant; but neither of them was either very much changed, or had lost its due proportion. In simple pericarditis, you will find that this is usually the case. It is true, that the motion of the heart is never quite free, and its sounds do not retain their full development, but

it is also true that the slight aberration from the normal sound which occurs in simple pericarditis, is very different from the rasping or very rough bellows sound heard in cases of endocarditis; whether this latter disease be simple or merely a complication of the pericarditis. You had a beautiful illustration of this distinction when you examined the case of the patient Robb, which was described when speaking of acute articular rheumatism. In him there was both endo and pericarditis, and we had the distension and dulness of sound indicative of pericarditis, with the rough and harsh sound, caused by the thickening and consequent stiffness of the valves. The chain of proof of what I have just advanced is, with me, conclusive; for I have seen cases of both endocarditis and pericarditis quite uncomplicated one with the other, and, therefore, well suited for studying the signs of these diseases in their simple state. I have again seen other cases in which the symptoms of one disease greatly predominated, without being perfectly unmixed one with the other. Some of these cases terminated fatally, and the examination after death proved the correctness of the diagnosis. The most recent cases of heart disease of the kind to which I am now alluding, were furnished by two patients affected with pneumonia; both died of the pneumonia, which was aggravated by the disease of the heart, although this latter affection was not, in itself, sufficient to cause death; and we could, therefore, test our diagnosis as applied to a membranous inflammation of the heart of moderate severity and in itself not fatal.

The first case occurred in the last winter; it began with laryngitis, attended by extreme prostration; the patient was then attacked with pneumonia, of which he died. During the course of the pneumonia, the patient was taken with pericarditis; there was a manifest dulness in the praecordial region, a slight prominence, and a distinct, though feeble creaking sound, chiefly heard during the dilatation of the heart. The sounds of the heart scarcely differed from the normal standard, although the impulse was somewhat feeble. As there was some obscurity in the case, the patient was, at my request, examined by my colleague, Dr. Pennock, who concurred with me in the diagnosis. The patient died, some days afterwards, from the pneumonia; on the autopsy we found patches of false membrane scattered over the surface of the pericardium, proving the existence of pericarditis. There was no liquid in the pericardium; this again corresponded with the accuracy of the diagnosis, for, previously to the death of the patient, the pericarditis had evidently declined, and the dulness on percussion had been gradually replaced by the natural resonance. This case, which occurred during the course of the present winter, afforded conclusive evidence of the actual relation between the signs of pericarditis and the corresponding anatomical lesions.

The second case presented itself more recently; it was that of a man ill with pneumonia which had advanced to the period of suppuration, previously to his admission. This patient offered, during

life, the signs of uncomplicated endocarditis; there was a dull confused action of the heart, neither of the natural sounds being very distinct; their rhythm was also somewhat changed. The impulse was diffused and labouring. There was but a very slight increase of the natural dulness on percussion, at the praecordial region, and there was no creaking sound. I considered this case as one of endocarditis, without much valvular alteration, and mentioned my reasons for this diagnosis to several of you, who were then present. The patient died of the mingled effects of the pneumonia and the endocarditis, and, as you remember, we found the internal membrane of the heart reddened, as well as that of the orifice of the aorta; it was covered with a delicate membrane that could be detached from it in strips of considerable length. On examination of this membrane by the aid of a magnifying lens, we found that it was apparently organized and traversed by numerous blood-vessels.

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## LECTURE V.

Tubercular meningitis. — Case. — Anatomical characters. — Symptoms.

I SHALL continue to-day, gentlemen, the subject of inflammations of the serous membranes, and take up the consideration of a case, which came under your notice at the hospital, a day or two since, and presented an example of inflammation of the serous membrane investing the brain. We may the more properly enter upon the subject at this time, as it will facilitate our future examination of the diseases of the substance of the brain.

The patient, of whom I have spoken, died in the ward No. 3, and was not under my immediate care. He was a carpenter by trade, and had suffered severely in early life from scrofulous affections; both his feet had been ulcerated from this cause, some time previous to his admission. He also laboured under disease of the heart, and entered the hospital for hydrothorax, the cavities of both pleuræ being filled with water, and suffering under an extreme and distressing dyspnœa. He was relieved from these symptoms by salivation, combined with the use of digitalis and squill. He got rid of his shortness of breath, and was able to work in the out-wards of the establishment, where he continued, until the breaking out of the epidemic of measles, with which disease he was taken on the second of April. He suffered considerably from the measles, but gradually became convalescent, till, on the twenty-eighth of April, he offered some symptoms of a cerebral affection; that is, unusual dulness, stupor, and oppression. On the first of May, the cerebral symptoms became so well marked, that they were recognised as those of meningitis by the physician in attendance. At that date he was in the following condition. For two days previously he had mani-

fested great restlessness, with occasional incoherence and hallucinations. Skin warm; pulse full and strong, the bis feriens character, which attended his convalescence from measles, having ceased from the twenty-ninth of April. This bis feriens pulse, a sign of convalescence from the measles, which was well marked in this case, ceased, you see, the moment he was taken with the new disease of the brain. The thirtieth, venesection  $\frac{3}{4}$ ix; the crassamentum of the blood was tolerably firm, and it was neither cupped nor sизy, about one-half of it being serum. The man at this time answered questions slowly, The conjunctiva was slightly injected. The tongue pale, moist, slightly furred. The pupils insensible to light, although he still recognised objects. No cephalalgia. The abdomen resonant; not painful on pressure, except in the hypogastric and pubic regions, where it was also distended and flat on percussion. Percussion of the left side of the chest resonant, except in the praecordial region; respiration pure. Percussion of the right side resonant, but less so than the left. Impulse of the heart strong; the first sound prolonged, attended with strong bellows murmur in the neighborhood of the nipple, the same character of the first sound observed between the second and third ribs; the second sound roughened, and heard over an unusually large extent of the right side. A purgative of salts and senna was prescribed, and a blister to the nape of the neck, dressed with mercurial ointment.

On the third the countenance was rather less dull than on the first, and he answered questions better; had been delirious the night before. There was some grinding of the teeth. The skin was moderately warm and hot. Pulse ninety per minute, and much smaller. Conjunctiva much redder; a discharge of a small quantity of yellowish matter from the right eye. In the afternoon, there was some strabismus and increased stupor. An injection of oil of turpentine and castor oil was administered, and cold applied to the head.

On the fourth there was very great stupor; the eyes were closed, and the patient could not be roused to answer questions. The head was turned to the right side; the right eye inflamed as before; the pupil of the left eye smaller than yesterday. Pulse about eighty-five, irregular and moderately strong. Bowels opened three times by the injection. Abdomen supple, and not distended. Cold to the head continued; calomel, followed by senna and salts. The same day the man died.

The symptoms here, you perceive, were not those which denote active, violent inflammation, but were simply dulness of the intellect, stupor, with grinding of the teeth, &c.

The treatment was commenced by a bleeding which would have been larger if the previous disease of the patient had not rendered him too feeble to bear it, and was followed by purging, and an attempt to mercurialize the patient, which latter failed, from the short time that elapsed between the administration of the remedies and the man's death.

The following appearances were found in the brain twenty-four hours after death.

Marked adhesion between the dura mater and the membrane beneath. The vessels of the dura mater were more congested than usual. In taking the brain from the cranium about two ounces of fluid escaped. The large vessels of the pia mater were much congested; the capillary vessels of a bright red tint,—inosculating. In the middle part of the right side, the convolutions were flattened; on this side, the injection of the pia mater extended to that portion dipping into the convolutions, and it adhered strongly to the cerebral substance. The injection and adhesions were less marked towards the posterior portion. At the anterior extremity, the arachnoid membrane was opaque; the injection and adhesion somewhat less than at the middle. On the left side this bright injection occupied the middle half and was confined almost exclusively to the small arterial vessels. Pia mater less adherent than on the right side. Arachnoid slightly opaque, throughout the whole extent presenting a few minute granulations, near the parietal protuberance. The cortical substance on both sides was of a rosy tint, a little brighter on the left than on the right. That portion of the arachnoid covering the fissure between the hemispheres, and at the summit of the brain, was slightly roughened. Corpus callosum softened. Fornix and septum lucidum pulpy. The right ventricle was larger than the left; the quantity of serum contained not known. The thalamus and corpora striata were pale. At the base of the brain, the colour was in a great measure lost, from the commencement of decomposition; but in the whole anterior hemisphere injection of the small vessels was manifest. There were small adhesions between the anterior lobes of the brain. Fissure of Sylvius, on the left side, strongly adherent, by a solid deposit around the vessels, part of which, in the form of granulations, was still distinct. On the right side the same thickening occurred around the vessels, but the newly formed matter was less abundant than on the left side; it still presented tuberculous granulations, less in size than a pin's head. The arachnoid was opaque and extremely thickened; the thickening of this membrane extended backwards over the chiasm of the optic nerves, which it slightly invested. Towards the cerebellum the thickening of the membranes became more marked at the upper portion, at the point of junction with the cerebrum; the double secretion was there distinct, consisting, in part, of minute granulations, beneath the membrane, and in its thickness; and, in part, of a thick, opaque, hard substance, filling up the space between them. The cerebellum was firm, like the rest of the brain.

There were no tubercles in the lungs, or the viscera of the abdomen. The state of the lymphatic glands was unfortunately not noted by the gentlemen who made the examination. From the former scrofulous disease, these glands were probably tubercular.

It is to be inferred, then, that the disease of the brain was here of an inflammatory character, from the injection and thickening of the

arachnoid membrane. It was evidently of the tuberculous variety, from the granulations which were found scattered beneath the arachnoid — it was a case of tubercular meningitis. The bright injection of the arachnoid, which is limited to the smaller vessels, is a very good diagnostic sign of inflammation; had it been observed in the larger vessels merely, I should have regarded it as a simple congestion. In the present instance we have, then, only the alteration in the membranes of the brain, to account for the cerebral symptoms, as the substance of the organ is not at all affected.

This subject of tubercular meningitis, gentlemen, is one that will present itself frequently to your notice, as it is a disease very common with children, and by no means rare in adults. It is generally slow and insidious in its progress, and requires a very careful examination to distinguish it, particularly in its early stage. I have taken for the subject of some general remarks to-day on this disease, a case in which we have had the pathological phenomena very clearly presented to us, and in which the indications, previous to death, were sufficient for a correct diagnosis of the affection. This case, I may remark, exemplifies the occasional effect of measles, in giving rise to the development of tubercles, to which I alluded at my last lecture.

This individual, we learned, had had an attack of brain fever, (so termed by his mother,) many years ago, by which his mind was at the time considerably affected. This was probably a scrofulous inflammation of the same character as that which finally carried him off. Children may recover from these tubercular cerebral affections, and, at some subsequent periods of their lives, present the same symptoms in a more marked manner, from a new secretion or, as it were, second crop of tubercles in the membranes of the brain. So, patients may partially and temporarily recover from pulmonary phthisis, as was shown to you in a late autopsy, where co-existing with the cavities which immediately preceded the death of the patient, were distinct traces of the operation of a former cure, in the hardened cicatrices, which we found in various parts of the lung. The man whose case we are considering, had probably recovered from an attack of tubercular meningitis, early in life, and he might have remained well, had not the occurrence of measles awakened the slumbering tubercular disposition, and caused a fresh development of the affection, which now proved fatal.

This subject of tubercular meningitis I investigated very fully some years ago at the Children's Hospital at Paris, and obtained some important results as to the nature and cause of the affection. The first point of inquiry, upon entering on the subject, is, have we any evidence of the existence of tubercles, elsewhere than in the brain and its membranes, in this affection? In the children who died from this form of inflammation of the brain, I found tubercles in the bronchial glands or other organs of the body, as well as in the substance and membranes of the brain, where they were found from the size of a pin's head to that of a large pea.

There was but one evident exception to this rule, out of thirty cases, that were analysed in a paper, which I published in the American Journal, in 1834. In the exceptional case, there were tuberculous granulations in the membranes of the brain, but not in other viscera. The coincidence of tubercles in various parts besides the brain conclusively proves, that a general tuberculous diathesis existed in these subjects, for in no other class of acute disease does the same rule obtain. In a few cases, however, the tuberculous deposit may not appear except in the membranes of the brain.

Having determined the point as to the general tubercular nature of the disease; the next matter to be investigated, is, the causes on which depends the development of the affection. Unquestionably, the scrofulous diathesis is the strongest predisposing cause of this affection, using the word scrofulous as significative alike of the tubercular and strumous temperament. In almost all the cases in which the cerebral affection occurs in adults, a scrofulous disease has previously existed, and perhaps been cured in some other part of the body, as the lower extremities, the glands of the neck, the lungs, and elsewhere. As to the exciting causes of the disease, they escaped us almost entirely; in the majority of cases, at the Enfans Malades, we could detect no antecedent fact, which could at all account for the development of the tubercular disease of the brain.

The measles, however, in the case under notice, is to be looked upon as the accidental cause of the development of the disease; and I may make the general remark, that, whenever, in a scrofulous child, you have an acute disease accompanied with fever, you may look for the development of inflammation of the brain, and are to watch your case with exceeding care.

The prognosis, in tubercular meningitis, must, generally, be more or less unfortunate, particularly in hospital practice. This deduction I base upon the observations made by myself and my friend Dr. Rufz, at the Children's Hospital at Paris, where, for one or two that got well, forty died. Indeed, Charpentier, who observed ten years ago in the same hospital, went so far as to say that he never saw one case recover. Yet, in private practice you will find the results much more favourable. In the hospital at Paris, the children were badly fed, confined in close rooms, and the treatment prescribed was not so minutely carried into execution as in private practice. I have not seen many children with this complaint since my return to Philadelphia, but those cases which I have seen were generally but not always fatal. A striking instance occurred in the child of one of our nurses; she was a girl of four or five years of age, and recovered entirely, but a second attack came on, a year or more after the first, and proved fatal.

The adults who are taken with tuberculous meningitis, nearly all labour under phthisis pulmonalis, which complication contributes not a little to the fatal termination of the affection. These cases are, of course, not fair standards for estimating the powers of treatment. In many cases, also, of this disease, the existence of

tubercles in the lungs may not be ascertained during life, although they may be found after death. This was the case with a negro, whom I examined some years ago at the Pennsylvania Hospital. (See *American Journal*, 1836.) During life he had neither cough nor expectoration, but I found, after death, numerous miliary tubercles in the lungs, as well as in the brain; in other words, the man laboured under general acute tubercular disease, which, from similarity in the size and appearance of the granulations, must have commenced nearly at the same time in the lungs and brain, but had not attained a large size in either organ. Generally, we meet with the disease in adults, under circumstances that preclude the hope of a cure; but, in children you may entertain a fair hope of success, if you see the case early; if it has advanced so far as the second stage of the disease, you have but a slight prospect of saving the child from speedy death.

The symptoms differ in children and in adults. In adults, the disease appears in patients actually labouring under phthisis, or of a decidedly strumous diathesis; while it often shows itself in children, who are in the enjoyment of tolerably good health, notwithstanding some latent tendency to scrofulous diseases. Whenever, therefore, in children, the symptoms which I shall describe as characteristic of the forming stage of the disease, present themselves, the physician should put himself upon the watch, though they are not to be looked upon as invariably indicative of the result in question. Tubercular meningitis may begin in two ways:—First, it may come on abruptly, as ordinary acute meningitis, with vomiting, chill, and fever. The cerebral symptoms may appear, however, without even the prelude of vomiting; in adults this symptom is commonly wanting. When its approach is more gradual, the following order of phenomena is observed:—

For the first few days the child merely evinces unusual restlessness and irritability, showing signs of excitement of the brain. He avoids light and sound, from the extreme sensibility of the eyes and ears. We have also a change in the intelligence, if the child be old enough to permit such attention to be noticed. First, it is simply excited; the child is more lively and acute, and more attentive to external objects than before. Afterwards the countenance becomes changed; the cheeks are flushed, the eyes unusually bright, and a well-marked frown and wrinkle are to be noticed on the forehead. This is one of the most important signs of the early stage of the disease; and at this period, it is essential to recognise all the symptoms, and this peculiar expression you may consider characteristic. This, together with the bright red flush upon the cheek, the nurses in the Children's Hospital used to look upon as an unfailing mark of the approach of the disease. The decubitus is at this time but slightly altered. But we often meet with some secondary symptoms, which, although they are not always present, are of some moment; these are nausea or vomiting, constipation, and fever, which is at first of a mild character.

We now pass to the second stage, comprising the symptoms which were first observed in the man who has just died; those of the forming stage were lost in the decline of the measles. These symptoms are delirium, which cannot of course be very accurately observed in children, particularly if they are very young. But some signs of it may be generally detected, especially at night, in the quick answers and altered manner of the child. This delirium differs from that of ordinary acute meningitis, in which the patient is violent, noisy, and loquacious. Here there is mere dulness and stupor, somewhat similar to the delirium of typhus fever; the child is not very violent, makes no efforts to walk about or to do mischief, but remains in a state of dull muttering.

I was impressed by this peculiarity of the delirium of tubercular meningitis, in two cases which came under my observation at the Pennsylvania Hospital three years since. In one, of so moderate a character was the delirium, that the patient was admitted for simple insanity. The only other symptoms that attracted attention, upon his admission, were a peculiar hobble and limp in his gait. We found the traces of several scrofulous disorders, which had been cured, and the man had also a slight cough, of which he had complained for two years past. The patient was constipated before his entrance, and shortly afterwards vomiting ensued, and then the cerebral symptoms became more decided. The paralysis occurred very early, from the coincidence of softening and inflammation of the substance of the brain with that of the membranes.

At first, in fact, I thought it was paralysis, from mere softening of the brain. Afterwards, I began to doubt, and regarded the case as one of tuberculous meningitis: finally, the autopsy cleared up all obscurity. The paralysis was found to be dependent on softening of the brain, and the delirium arose from tubercular meningitis with effusion of lymph at the base. This complication of lesions necessarily gave rise to the intermixture of the symptoms of meningeal with those of cerebral inflammation; in practice this coincidence is by no means rare, and it is not often difficult to detect it. The seat of the disease was here the same as in the case of the man Crane; the deposit of tubercles was along the blood-vessels, following the ordinary law which regulates the secretion of tubercular matter.

Besides the delirium of the second stage, we meet with alteration of the senses, as in the case of Crane. The pupils are generally dilated, moderately and gradually; in some cases, they are contracted, but, as was observed by Dr. Stewardson in the present case, it is difficult to tell if they are permanently contracted, being at one time contracted, and at another dilated. These alterations of the pupils are most important signs, particularly when accompanied by the muttering delirium.

Lesions of motility next present themselves. These consist at first principally in subsultus or even spasms, as in typhus fever; indeed I have sometimes hesitated for a little while in my diagnosis,

between the two 'affections. Paralysis is by no means a necessary symptom in the second stage of meningitis. But we have then the beginning of another symptom, rigidity. In the case of a man now in the wards, this stiffness could be detected only by careful examination of the elbow, but it may be usually very early ascertained with proper caution. This rigidity differs from contraction, which is a more advanced degree of it, and is more rarely met with in this form of meningitis. Rigidity is not here confined to one side of the body, as in apoplexy and softening of the brain, for the tubercles are secreted, on both sides of the base of the brain, and, hence, the symptoms of disease of the membranes are rarely confined to one-half the body, while those of the cerebral substance are as rarely extended beyond it.

These are the chief cerebral symptoms of the second stage of the affection. We now pass to another set, those of the digestive organs. Vomiting is one of the most constant symptoms of tubercular meningitis in children, but it rarely continues beyond the first stage. Another peculiar and important symptom is constipation. In the second of the two patients in the Pennsylvania Hospital, to whom I have alluded, the case was at first looked upon by his physician as one of simple constipation; and the true nature of the complaint was suspected only when it was found that the symptom did not yield to purging. This gives us a valuable therapeutic indication, in the treatment of the affection — that is, the propriety of purging. The appetite is generally lost from the beginning of the affection. The thirst is in proportion to the degree of fever present. The state of the pulse may be learned from the case of Crane. In him, the bis feriens pulse, of 40 and 66 per minute, existing during the convalescence of measles, rose at once to 90, and continued at this point till the third stage, when it sank again to 85. It was therefore simply febrile in the second stage, and irregular in the first and third. It is rarely slow, and slowness may be looked upon as a good symptom, except in the third stage.

The other symptoms are less significant in their character, and I would merely refer you to the memoirs which I published in the American Journal, in the years 1834-35.

In the third stage, or after effusion of serum, pus, or lymph has taken place, the ordinary termination of serous inflammation, to which I called your attention in my last lecture; we have a subsidence of the acute febrile disturbance, the pulse is often preternaturally slow, coma comes on with partial paralysis from the pressure of the effusion, which is not necessarily confined to one side of the body, and is slow and gradual in its advances.

I have given you merely a slight sketch of the pathological anatomy of this affection, as I do not, in this course, intend to dwell, at any great length, upon this subject. The treatment of tubercular meningitis, to the consideration of which we now pass, involves many important questions. It must vary, according to the severity of the actual symptoms, and the circumstance of the existence of a

previous tubercular disease. If the patient is in the third stage of phthisis pulmonalis, you can of course do little or nothing. If this be not the case, however, you may, I think, do much. The case must be at first treated as one of simple meningitis. Your object should be to get rid of the acute inflammation of the brain, which increases necessarily the disposition to tubercular secretion, and may at once kill the patient. You must not, however, deplete to the same extent that would be advisable if there were no tubercular deposition. You are to steer a middle course. My plan is to resort to bloodletting, general and local, unless the development of tubercles be very far advanced. I have recourse to general bloodletting once, and once only, even in adults. It is an old remark of writers, that inflammations of the membranes of the brain generally bear excessive depletion worse than those of other organs, but always tolerate well the local abstraction of blood. Local bleeding is to be directed, so long as the patient can bear it, that is to say, until he becomes pale, and the flush is gone, whether the other symptoms abate or not. After depletion, I was formerly in the habit of placing blisters to the back of the neck. I am now in the practice of applying them behind the ears. The discharge can here be kept up longer, and will act more steadily, and the sore can be better dressed; the patient may be mercurialised by dressing these blisters with mercurial ointment. The discharge by the blisters I keep up, until the patient is perfectly well. Another remedy is counter-irritation elsewhere than near the head. The feet are apt to be cold; they are to be plunged into hot water from time to time, to be clothed with flannel, and rubbed occasionally with cayenne pepper. But you are to abstain from further blistering; it only serves to create fever, and is generally mischievous. Sinapisms may be used; but the surface is not to be vesicated.

The next remedy to be employed is purging. If the patient be strong and robust, it answers a very good purpose, and in a few rare cases at once relieves him. But in children, if relief be not afforded by one or two purgative doses, it is proper to be cautious as to their employment. With children I begin with a mercurial purge, from four to eight grains of calomel, to be followed by a saline purgative, or still better some castor oil. Mercurials are used by the French merely for the purpose of purging; of course they do not salivate, and, when persisted in, do no good. As soon as the acute stage of the disease has abated, you must commence with mercurial dressings and frictions of the abdomen. These are of most service in the sub-acute variety of the disease.

I have now detailed you the ordinary practice to be observed in the management of tubercular meningitis. To one or two points your attention is to be particularly directed. You must carefully watch the moment when it is proper to stop bloodletting, and immediately after commence the introduction of mercury into the system, and continue it until the active period is past.

After the third stage of the disease is established, and paralysis

makes its appearance, treatment can do no good. The affection is fatal, because the functions of the brain cannot be interfered with with impunity.

Tubercular serous inflammations are not elsewhere so fatal, as when they occur in the membranes of the brain. When secondary peritonitis and pleurisy destroy life, death usually follows from perforation of the glands of Peyer, or perforation of the lungs.

The tuberculous inflammations of these membranes, however, assume a much higher importance from their tendency to return, and even to attack other portions of the body. Besides, they certainly favour the development of tubercles, in cases in which the patient had previously presented merely the signs of the diathesis which precedes this morbid deposit. For a more complete account of this connection, I must refer you to my lectures on pathological anatomy.

The symptoms and treatment of tuberculous meningitis you will find detailed in the memoirs which I published in the American Journal, in the years 1834-5, as well as in the paper of my friend, Dr. Rufz.

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## LECTURE VI.

Peritonitis from cancer of liver.—Acute Meningitis.—Diagnosis — Symptoms — Treatment.

It is my intention, to-day, gentlemen, to continue the discussion of inflammations of the serous membranes, with particular reference to the subject of meningitis. Previously, however, to entering upon this latter topic, I shall call your attention to a case of serous inflammation, which terminated, a day or two ago, at the Hospital, and at the post mortem examination of which most of you were present yesterday morning. We had, you recollect, acute peritonitis, pervading the whole of the abdomen, the result of a chronic disease of the liver. This disease of the liver was suspected, during the lifetime of the patient, there being sufficient evidence of the enlargement and hardening of the organ. The nature of the affection we found to be cancerous; rounded deposits having the anatomical characters of vascular sarcoma, were scattered throughout the substance of the liver, offering very fair specimens of this variety of soft cancer. I shall not now enter into an examination of the subject of cancer, but shall confine myself to the acute inflammation of the serous membrane, which was induced by the carcinomatous disease. This case of secondary peritonitis exemplifies the law I enunciated to you, at a previous lecture. Serous inflammations, with the exception of those of the membranes of the brain, are not very dangerous, unless they occur as secondary to a

primary lesion of an organ, or are connected with a cachectic state. This secondary inflammation, which is very frequent in the peritoneum, may be either acute or chronic. In the present instance, it was acute, and, probably, arose from the cancerous tumours approaching the surface of the liver. Examples of the chronic secondary inflammation of the peritoneum are most frequent in phthisis, when they are connected with a tuberculous deposit in the serous membrane itself, as was demonstrated to you in one of my last lectures on pathological anatomy.

In the present instance the peritonitis was acute; it was only within the last two or three days of the patient's life that he was seized with acute pain over the whole of the abdomen, accompanied with great tenderness on pressure. A tumour was distinctly felt, which I described to you as similar to the pointing of an abscess, and induced me to suspect the presence of suppuration. After the occurrence of the acute pain, the patient sank rapidly, without any other of the usual symptoms of peritonitis, as vomiting, &c., but his prostration was extremely great. Prostration of this character is a striking symptom of the secondary serous inflammation of the peritoneum, and is a most valuable sign in leading us to our diagnosis. You have seen it before in a case of pericarditis succeeding gangrene of the lungs, and also in the case of a black man affected with tuberculous pleurisy. Whenever you have sudden and extreme prostration, supervening upon a chronic disease, in any of the great cavities, you may suspect the existence of secondary inflammation of their serous coats; but it is much more intense in peritonitis than in pleurisy or pericarditis. This was the character of the tubercular peritonitis, depending on perforation of the intestine, noticed in a preceding lecture; and I have, at other times, pointed out to you instances in which there was the same kind of perforation into the cavity of the pleura, following ulceration of the lungs. Perforation is by no means necessary to the production of these secondary inflammations of serous membranes; in the case now before us, the exciting cause was the irritation of the cancerous masses in the liver, but just beneath the peritoneum. The same disease may occur in the ovaries, uterus, and other parts, producing similar results.

Another example of secondary peritonitis is the affection, generally designated as puerperal fever, a term which is now usually limited to peritonitis, although some physicians are still in the habit of including all febrile diseases of lying-women under this head. It is imperative, however, to distinguish between these affections. The true secondary peritonitis of puerperal women depends upon the inflammation of the uterus or its veins, or else upon the irritation consequent upon delivery; but it is rendered more frequent and more severe by the strong tendency to suppuration, which extends to all the membranes and organs of puerperal women, and gives rise to the various affections which are sometimes called puerperal fever.

The anatomical signs in this case were similar to those observed

in the other cases of serous inflammation, which have come under your notice just now, from their great prevalence in spring and the beginning of summer. Thus, to study pathology, you see how necessary it is to pass through seasons and even cycles of disease. In these serous inflammations, you see how interlocked they are with all other diseases, occurring sometimes as idiopathic, but in the large majority of cases as secondary affections; the first class being rarely fatal, except when attacking the membranes of the brain. Continuing the subject of special serous inflammations, I shall now proceed to take up the subject of *meningitis*.

Meningitis may be easily confounded with other affections of the brain. We had a case a few weeks ago, of a surgical patient, affected with disease of the urethra, in which it was with some difficulty that we made out, even after death, a satisfactory diagnosis, the point being settled with certainty, only by the presence of a slight quantity of pus. I was called to the case, a short time before the man's death, when the only striking symptom was delirium, which I looked upon as merely the concluding act of life. The true nature of the affection was, however, revealed by a post mortem examination. We found, first, a bright injection of the pia mater, which is characteristic of inflammation, particularly if there be no serum present. Injection of the large vessels is not indicative of inflammation, but merely of congestion; the two not usually co-existing together—a bright arterial tint denoting the one, while the other gives a dark blue colour to the surface implicated. The injection was in this case spread over the whole surface of the membrane; this is generally the case, although it predominates at one portion, either the base or the summit of the brain. Here, the inflammation was most evident at the summit, involving the faculties of the intelligence; while, in children, it usually occupies the base and is connected with a disturbance of the senses. The distinction I make here, coincides with one of the leading points of phrenology, which allots the faculties of the intellect and of the senses to different portions of the brain. Although I look upon the details of this science as still founded only upon the imagination, yet the great fact, that the intellect is connected with the summit, and the senses with the base of the brain, is unquestionably true, and confirmed by pathological observations.

The roughness of the serous coat, the arachnoid membrane, is the next point to be noticed in this case. It might seem, that mere effusion of liquid would be enough to characterize inflammation of this membrane. This is not so, however; when it is in a healthy state, there exists a liquid, which is clear and transparent, but in the early stages of real inflammation, becomes altered in quality and deficient in quantity. The inflammation is not so much that of the arachnoid membrane as of the subjacent pia mater, in the meshes of which the morbid products are chiefly retained. True inflammation of the arachnoid is of very rare occurrence. In the present case, we found pus mixed with lymph in the pia mater, giving a yellowish

appearance to the membrane. The three great features, then, of this case, from which we concluded that it was one of acute meningitis, were the injection of the small vessels of the arachnoid, the roughening of this membrane, and the deposit of lymph and pus beneath it.

The consideration of this case offers another point of much interest — the connection between affections of the urinary organs and diseases of the brain. Ten years since, my attention was first directed to this subject, upon observing a man labouring under stricture and thickening of the lining membrane of the urethra, to my great astonishment, perish suddenly from cerebral symptoms. At the Pennsylvania Hospital, two or three years ago, I noticed the death of a man from similar symptoms of disease of the brain, after a few days' illness, who had been previously suffering from inflammation of the neck of the bladder and urethra. Various writers, and particularly Lallemand, have called attention to this subject. Dr. Lallemand has dwelt, especially, upon the connection between diurnal seminal emissions dependent upon chronic inflammation, and the development of cerebral disease. The cases of this character, described by Lallemand, he usually traced to chronic gonorrhœa, which, occasioning a thickening of the neck of the bladder, the vesiculæ seminales, and the ductus ejaculatorius, left the latter in a patulous condition, allowing a discharge of semen to take place without ejaculation, during the acts of urining or fecating. The dependence of cerebral disease upon causes of this nature, is therefore a highly important fact, which will assist you in understanding some affections otherwise not easily explicable, for the seminal weakness, of long continuance, enfeebles the understanding, and, finally, the brain is disordered to such an extent, that medical relief is sought for. I have had several cases of this character, in which the affection was supposed to be connected with a nervous temperament, and was, in short, referred to various other causes than the correct one, but, in every instance, I was able to make out the previous existence of chronic gonorrhœa, producing the condition of the urino-genital organs which I have described, and, through this means, giving rise to functional cerebro-nervous disturbance. At first this is purely nervous, but after it has lasted for a few days it may become inflammatory. When the nervous disease is replaced by the organic one, you will find that the symptoms become much more permanent, and more or less paralysis soon follows. M. Lallemand treats these affections by directing his remedies to the urinary organs.

In the case of the man at the Pennsylvania Hospital, to whose death, with cerebral symptoms, I have alluded, we found upon examination after death the vesiculæ seminales and ductus ejaculatorius destroyed; an abscess behind the verumontanum, filled with pus; and the coats of the bladder contracted and thickened. The particular history of the case was not taken, but it illustrates finely, how chronic diseases of the urethra give rise to affections of the brain; and how causes, trivial in themselves, may produce serious

and fatal functional disturbances. Death, to use the words of M. Lallemand, may be the result of a series of illnesses, dating their origin from an attack of gonorrhœa ; which is in itself an insignificant affection.

From this digression, I return to the subject of inflammation of the membranes of the brain. The case of the man Brown, which has been under your notice for some time past, at the hospital, will serve as a fair illustration of the subject. We have no example in the hospital of acute meningitis but the case of Brown, which is of the sub-acute form, being more slow in its progress, and better marked in its character, will very properly serve as introductory to the study of the acute type of the disease. This man was taken ill with cephalalgia, in the region of the forehead and frontal sinuses. We inferred, as we had a right to, that it was not a case of secondary meningitis, from the absence of any previous ill health. Soon after the commencement of the headache, the senses became implicated ; the sight of the left eye was impaired, and the hearing was disturbed with tinnitus, buzzing, resembling the noise produced by a saw, and as the affection declined, it was like the humming of bees. These comparisons are the patient's own expressions, and were not elicited by any leading question ; they are, therefore, the more descriptive of the symptoms. With the advance of the disease, there were dulness, sadness, and somnolency, but no delirium. There was contraction about the eyebrows and the root of the nose, forming, as I mentioned when noticing this symptom in the lecture on tubercular meningitis, one of the best marked signs of meningeal inflammation. The contraction was, in this case, of a permanent character, and would have enabled any one, at all accustomed to the affection, at once to recognise it. There was no paralysis ; no subsultus. The inflammation was confined to the anterior and inferior parts of the brain, not extending to the summit, as the faculties of the intelligence were but little impaired, nor was there much lesion of the cerebral substance, for there was neither paralysis nor rigidity.

After establishing the symptoms, the question starts itself, with what affections might this case be confounded ? With very few. First, it could not be acute meningitis. The tongue was natural, and, although there was some constipation, there was no nausea or vomiting ; there was no cough ; nor was there any unnatural excitement of the pulse, and no dreaded delirium or intense excitement of the brain. The inflammation was then limited to a small spot of the brain, for had it been more extended, the pulse must have shown it, by becoming unduly excited. The same absence of paralysis which showed that there could be but little cerebral lesion, would indicate that the disease did not depend upon large tubercles, or other chronic tumours of the membranes, for these lesions speedily produce palsy. By way of exclusion, therefore, we succeeded in localizing the affection, and we recognised meningitis attacking the anterior portion and base of the brain. In addition

to its anti-febrile character, its course, which lasted a month, a much longer duration than belongs to the acute form of the affection, and its gradual decline, satisfactorily demonstrated its sub-acute progress.

The prognosis was an important point, which came up for discussion, at the period of the man's entrance into the hospital. It was at first doubtful; was the meningitis secondary, and dependent on the presence of a tumour or tubercles, or the like? After the lapse of two or three days, it was clear that there was no chronic disease, but that the affection was a mere local phrenitis or meningitis. We made our minds up to this conclusion, from the evident absence of all symptoms of an impaired constitution. The man had not been ill before the time of his recent attack, he had never called for the aid of a physician, nor had his friends; I say his friends, because in chronic cerebral affections the patient himself is often afraid to call attention to his symptoms, and the first application for medical relief is on the part of his friends, as the evidence of some decided mental aberration or change of feeling or habits is forced upon them.

The treatment proper in acute meningitis is sufficiently well exemplified by that pursued in this case. There are certain great laws well laid down for the management of this affection, which are much more clearly understood than the subject of therapeutics in general, owing, I think, to the fact, that close observation is more easy in meningitis, from its rapid and well defined symptoms, than in diseases of the thorax or abdomen. The following are the points to be attended to in treating acute meningitis.

Bloodletting, in patients who give evidence of tolerable strength, embonpoint, and previous good health, is always advisable; but in the acute form of the disease, depletion becomes a measure of absolute necessity, and if it be neglected your chance of saving your patient is but small. Should your bleeding be large or small? It is best to take a considerable quantity of blood at once from the patient, if he be a stout and healthy man; you may thus, sometimes, immediately arrest the disease. When serving in the Pennsylvania Hospital, I had a case illustrative of the good effects of this practice, and of the great importance of a correct diagnosis in cerebral affections. A man was brought into the cells, said to be labouring under mania a potu: he was a sailor, who had just made a voyage from Boston; he had been drinking to excess, but had also been working hard, exposed to a very hot sun. Upon examination, I found the signs he exhibited to be not those of ordinary mania a potu; his head was hot, his pulse quick, in short, he was in the first stage of acute inflammation of the brain. I bled him largely, between twenty and thirty ounces, and he was, I may say, instantly cured. It is true, that the next day I directed a slight cupping, a purge, and the like; but they were merely by way of precaution. Had this patient been treated by opiates as a case of mania a potu, he must almost infallibly have died. Such cases I

have seen treated in this manner in hospitals, for so common a vice is drunkenness in this country, that all diseases of the brain occurring in intemperate persons, are apt to be indiscriminately regarded as the effects of excessive indulgence in ardent spirits. When I was a resident physician in the Alms-House Hospital, a woman was brought in with a fracture of the skull, upon which arachnitis supervened. She was treated as a case of mania a potu, by a gentleman who was writing a thesis on this subject ; his mind was consequently absorbed by this single variety of cerebral affection, and a most unfortunate error was committed. She died, and upon examination after death, spiculæ of bone were found driven in upon the dura mater !

After you have bled once largely, it is best to limit a repetition of general bleeding to cases of individuals of a very plethoric habit. In place of general depletion, keep up cupping and leeching, which, if persisted in with regularity, will do much good. As to cupping, everything depends upon the manner in which it is applied. In the case of Brown, all the cuppings were of service except one, when the cups were applied to the temples ; here it seemed only to augment the irritation — the pressure of the cups very near the seat of disease causing an afflux of blood to the part. The cups, which were applied to the back of the neck, all did good. I do not speak of cups to the forehead, because no body thinks of using them in that quarter. My advice, then, is to cup rarely to the temples, and generally to the back of the neck ; leeches behind the ears may be employed with much advantage ; in this very case, I found leeching behind the ears of service, when the cupping ceased to do good, showing the mere change in the manner of abstracting blood to be of essential importance. Leeching, then, is to be sometimes resorted to, though cups are generally to be preferred in taking blood locally, from the ease with which the quantity may be regulated, and the facility with which they may be obtained ; but if you find the patient very excitable, leeches are much more certain than cups, and relieve more with the loss of a less quantity of blood.

In very acute meningitis, you have within your control another powerful remedy, and one that is quite as important as any of the others — ice to the head. It is to be applied with caution, and you are to judge of its producing an effect by the supervention of faintness, languor, or paleness of the face. In hospitals, the ice may be applied in a tranquillizing chair, but in private practice, where you have no such convenience, a bandage with a bladder of pounded ice may be employed for this purpose ; you must be careful to renew the application as soon as the ice melts, otherwise the alternation of heat and cold thus produced may do harm. The use of ice I would continue for several days, until there was a decided abatement of the acute symptoms. It is a great point in the management of this disease, to have for the patient proper attendance of persons who can control him. For this purpose one, two, or three men nurses will be indispensable in private practice, where

those means of restraint are wanting, which are to be met with in lunatic hospitals.

The next remedy I shall mention acts on the same principle as the last, and is intended to produce revulsion from the head; it is the application of warmth and stimulating poultices to the extremities. I was treating a patient some time ago with ice to the head, in whom, although, the ice was evidently doing good, it produced pallor and languor, and the symptoms abated but little; upon examination, finding the feet cold, I directed warm stockings to be put on them, had sinapisms applied, and ordered them to be occasionally plunged into warm water, which was followed by an evident amelioration of the symptoms. Unless you attend to these precautions, you will lose much of the good that may be derived from the application of cold to the head. Upon trifles like this, success in a great measure depends, in the management of this affection; indeed in therapeutics the advantage which one practitioner has over another, depends chiefly upon his attention to minute and seemingly unimportant details.

Although it may be somewhat irrelevant, I cannot here forget to caution you against falling into those habits of careless and hasty prescribing, which are sometimes produced by a negligent attention to the practice of public institutions. The advantages of hospitals are inestimable to one who uses them in a right spirit; that is, as schools of diagnosis, and of the great therapeutic indications. But you must remember that in private practice you must carefully direct or even superintend in person, a multitude of details, which are usually attended to in hospitals by well-trained nurses, aided by the system which exists in all well conducted institutions.

Much of the reputation of Dr. Physick as a practical physician, depended on a strict attention to these minuter points of detail, and he had, therefore, often better success in the management of even medical cases, than persons who were perhaps more familiar with pathology, but not equally attentive to these particulars.

Purging is a remedy which has been almost from time immemo-  
rial adopted in the treatment of acute inflammations of the brain. The saline purgatives combined with senna, or a mercurial purge, are those generally employed. I prefer a mercurial purge, as it serves a double object, by acting on the liver, and preparing the way for ptyalism, if it should afterwards become necessary; it is besides a good preparation for the saline articles. I would begin by ten grains of calomel, followed up the next day by a dose of salts and senna; should the calomel not purge, it will salivate, which is not to be dreaded. After, at least, a single mercurial purge, you may give doses of senna and salts,—a robust patient will require half an ounce of each; these, by inducing serous discharges from the bowels, will have a derivative effect. Afterwards your object should not be to produce violent purging, but to keep up a moderate looseness of the bowels.

Should the delirium not yield to depletion and purging, these

remedies should not be continued after the strength of the patient begins to decline, but you must now have recourse to mercury in small doses, and to blisters. Mercurials, like tartarized antimony, act as antagonists to inflammation, and may with propriety be employed in the second stage, or in the sub-acute form of the affection. They would have been highly appropriate in the case of Brown, in whom we should have prescribed them, had the disease not yielded in the first instance to the local depletory treatment. It is best to continue the use of mercury until ptyalism is produced. By effecting this, I have succeeded in curing a large proportion of the cases which have occurred in my wards of the hospital. An interesting case happened last summer, which, perhaps, some of you may recollect. It was that of a young man who had been a clerk at Mobile, and who on his way to Philadelphia, by the Mississippi river, had been taken ill with fever and delirium at Cincinnati, from which he recovered with difficulty. He came to Philadelphia not quite well, having still some symptoms of cerebral disease. He was taken ill again and brought to the hospital. He was then in a state of high cerebral excitement, being occasionally rational, and relapsing again into delirium; throughout the night he would be in a state of great liveliness, loquacious, restless, with his senses considerably excited. From the history of the case, I concluded it to be one originally of acute meningitis, which had now become chronic, and began the treatment of it with blisters and local depletion, but the delirium did not yield, until a mild mercurial course was presented. Another case I may mention was that of a young sailor, who was taken ill under circumstances which I do not now recollect. He had pleurisy first, and afterwards meningitis, and the disease did not abate till after a mercurial course. The symptoms were not the violent delirium of the last mentioned patient, but mere stupor, dulness of the senses, and constant disposition to throw his head strongly backwards. Neither of these cases was dependent on the presence of tubercles or other chronic lesion.

We come next to speak of blisters, which, it might seem at first sight, would be proper at an earlier period of the affection. This is not the case, however; in the first stage they seem only to irritate, and decidedly augment the extreme agitation and violent delirium; they should be delayed till the acute symptoms subside, when they may be applied over the occipital region, extending to the back of the neck. They are to be rarely applied over the whole scalp, where they give great pain. The same law that regulates the employment of leeching or cupping is applicable here; the blisters do more good at some distance from, than immediately over the inflamed portion of the brain; when the disease is more chronic, it is often useful to keep a blister discharging behind each ear, as I have already advised in the treatment of acute hydrocephalus.

Caustic issues or incisions over the fontanelles have been recom-

mended in chronic meningitis, but as they are very inconvenient, they have not been generally used, though I see no reason why they should not be employed in certain cases, especially where there is reason to apprehend that the disease has followed an injury of the head.

The plan of treatment which I have given will succeed in curing the majority of cases of acute meningitis. If, however, the affection should not yield, and passes into the chronic state, the patient remains necessarily more or less insane, and is apt to sink into the third stage of insanity or dementia. He becomes utterly incoherent, and the case usually terminates in a very curious but totally incurable variety of paralysis, called the paralysis of the insane.

In the beginning of this kind of insanity, when the appearances of active inflammation have in a great degree subsided, cold affusions upon the head, repeated several times daily, mild laxatives, a sparing diet, abstinence from all excitement or exposure to the sun, with gentle exercise, prove the most useful remedies. In short, the treatment must be extremely mild, but persevere while a hope remains of saving your patient from the worst species of insanity.

When acute meningitis is fatal, the patient generally dies at the end of the second, or in the third stage of the disease, or he may die from meningeal apoplexy. I have twice or thrice seen a patient in the Alms-House, labouring under meningitis, become suddenly comatose, with stertorous breathing and loss of power of the limbs. The symptoms were those of apoplexy, arising from effusion of blood, not into the substance of the brain, but on the surface of both hemispheres into the membranes, which, from its pressure, is therefore necessarily fatal.

Whether the inflammation of the membranes of the brain be acute or not, as soon as the third stage, or that of effusion of lymph or pus supervenes, the delirium becomes less violent, the disturbance of the senses is succeeded by a total abolition of them, the patient neither seeing or feeling. There is a gradual supervention of paralysis; sudden dilatation of the pupils in place of alternate contractions; and there is usually, but not always, strabismus. This stage is necessarily fatal, there being no possibility of a recovery.

To recapitulate briefly the course of my remarks to-day — you have had your attention called to the anatomical characters of certain serous inflammations, and after tracing the connection between cerebral affections and those of the genito-urinary organs, I have entered at length into the treatment of acute meningitis, basing my remarks upon a case of the sub-acute variety which has been lately under notice at the hospital. I have not gone into more details of the symptoms of acute meningitis, waiting till they present themselves to our notice, which, from our knowledge of the course of these affections, must be the case during the summer. The sub-acute variety is the only one which I am now able to demonstrate, by reference to a case actually under your notice.

## LECTURE VII.

Chronic meningitis. — Apoplexy. — Paralysis of the insane.

AT my last lecture, I continued the subject of inflammations of the brain, dwelling particularly upon that of acute meningitis, which I was able to illustrate by a case of the sub-acute form of the affection, at that time under your notice at the hospital. I merely alluded at the time to the subject of chronic meningitis, without entering into it at any length, and I, therefore, propose now to say a few words upon it, as it properly belongs to this period of my course. We have a large number of cases of this affection in the wards of the hospital. I shall select the best marked of them, that of Urweiler, a German, to whose history and symptoms I shall briefly call your attention. This man, two or three years ago, having previously enjoyed good health, received a blow on the head, the effects of which, at the time, were not very seriously felt. He suffered slight headache, pain, &c., which however soon abated. But, after a lapse of time, the powers of his mind began to fail, and he became, finally, entirely deranged, and in addition to this disorder of the intellect, paralysis is gradually supervening. This latter symptom, as you may have observed in the hospital, is a very common accompaniment of insanity, chiefly of dementia; it is, however, often met with in persons in whom insanity is not yet developed, the functions of motility being attacked before the intellect is much impaired. The disease is, therefore, often to be recognised at first by the mere disorder in the powers of movement, and may ordinarily be detected as follows. Slight symptoms of mental aberration are presented, often not well marked, but, again, rapidly becoming strongly characterized, and running into the worst degree of madness — incoherence. The organs of locomotion become also affected, the first symptoms being a failure in the power of walking; but feebleness of the upper extremities does not often show itself at first; a hobble or limp is noticed, generally, at first, on one side of the body only. Other changes then take place, the upper extremities becoming involved, the face slightly distorted, the tongue is protruded with difficulty, and the speech thick; these symptoms, however, are often indistinct at first, with the exception of the failure in the power of walking, which always shows itself. The symptoms for the most part, gradually but slowly advance, scarcely ever retrograding. If the patient is insane when the partial paralysis appears, the affection is nearly always fatal. Dr. Calmeil, who was connected with the lunatic hospital at Charenton, near Paris, considered it always fatal; and my own prognosis accords very nearly with his opinion. It is somewhat singular that this disease is much more frequent in men than women; although very common at the

Bicêtre and Charenton, it is comparatively rare at the Salpêtrière, where none but women are admitted.

In the diagnosis of this affection you must not, however, be too confident; it is necessary that the cerebral symptoms should be permanent, and not merely the slight disturbance of brain which occasionally results from disordered abdominal functions. If you are not quite sure, therefore, watch the patient for a little while, and the case will become clear.

I shall not now enter at length into the pathological features of the affection, merely bringing before you two cases that came under my notice some time ago. One was of a gentleman, who died about two years since; he had been hurt by a fall, from the consequences of which he seemed to have recovered; but two or three years subsequently his walking began to fail, soon afterwards his mind, and a short time only passed after the development of these symptoms, before he died. On examination after death we found the membranes of the brain universally thickened. The other case was that of a man, who had been a master of a vessel in the merchant-service; just previous to his attack, he had been suffering from a soreness of throat, which improved but little under a treatment consisting chiefly of local applications; symptoms of disease of the brain soon appeared, and the man entered the Pennsylvania Hospital. At this time he had incomplete paralysis of the lower extremities and of the left arm, with painful deglutition; these symptoms went on slowly, but finally destroyed the patient. After death, we detected a slight thickening of the membranes lining the ventricles, and were astonished to find how little the medullary substance of the brain was affected, and that the cortical substance was merely in the normal state.

Treatment in chronic meningitis is available only when the functions of motility are not impaired, and those of the intellect alone are affected. The mode of treatment to be resorted to, consists in a regulated diet, blisters to the nape of the neck and behind the ears, and cold affusions twice or thrice a day. Although I cannot affirm that I have entirely cured any patients labouring under actual paralysis, I have certainly, by the plan detailed to you, restored several in whom the disease had proceeded no farther than the affection of the mind. The patient Urweiler is much better, speaks with greater ease, and has obviously more strength in the limbs.

The next disease of the brain which I shall notice, offers, at this time, several cases in the wards of the hospital, and will be often encountered by you in the course of your practice — I mean *apoplexy*. Of the cases in the hospital, one is a recent one, and two, in the black wards, occurred as far back as a year ago. The term apoplexy is often used very indefinitely. It is applied to four different pathological states: 1st, true apoplexy, or hemorrhage into the substance of the brain or its membranes; 2d, simple congestion, or prefernatural fulness of the vessels of the brain; 3d, serous apoplexy, in which the brain is oppressed and its functions impeded

by a large serous effusion ; 4th, nervous apoplexy, in which many of the symptoms, such as loss of consciousness, &c., are developed without any appreciable organic lesion. I shall here employ it to signify an actual hemorrhage into the substance or beneath the membranes of the brain, excluding mere effusions of serum, all cases where there is no organic lesion of the brain, as well as those in which mere congestion occurs, an affection which is most frequent during the summer season, and at the close of the winter. These cases are all confounded with true apoplexy, and indiscriminately classed under the same name ; sometimes, indeed, when no one function of the brain is disordered, the term apoplexy is given to sudden deaths. A man will fall down dead, perhaps, with some comatose symptoms from disease of the heart, and his death is at once referred to apoplexy ; whereas, genuine apoplexy almost never causes instantaneous death. When the case terminates fatally, it is usually after a lapse of some months, from paralysis. It sometimes proves fatal in the course of a few minutes, or half an hour ; but in these cases there is usually blood effused into the ventricles, and it is not common for it to terminate before the end of several hours, even when most severe. The exceptions to the rule, that sudden death does not follow apoplexy, are indeed so rare, that you may pretty safely pronounce an instantaneous death to be independent of this cause. These very sudden deaths are usually owing to diseases of the heart, although in some of them no organic lesion whatever can be found of any organ.\* There was an example of this sudden death a few months since at the hospital, in a patient who was labouring under a chronic disease of the heart, who died during my visit. I found him in his ordinary condition, and had just left the ward, when I was suddenly called back and found him dead.

The anatomical characters of apoplexy are easily ascertained, and may be divided into two great varieties — in the first and most common, the effusion of blood takes place into the substance of the brain, in the other it takes place into the membranes. Any spot in the brain may be the seat of the hemorrhage, but it is generally the thalamus of the optic nerves and corpus striatum. The blood is sometimes poured out in such quantity as to break into the ventricles, and even force asunder the septum between them, so that it presses upon both hemispheres of the brain ; but it is generally confined to a single spot, on one hemisphere.

The character of the clot is always the same ; it consists of a mass of dark coagulated blood, surrounded by the tissue of the brain, which is, to a certain extent, ecchymosed and softened : this softening may be either the effects of previous disease, or the consequence of the apoplexy. Dr. Rochoux, who observed at the Bicêtre hospital, thinks that apoplexy always depends upon the previous existence of local softening in the brain, the hemorrhage

\* Memoir of Dr. Louis.

afterwards taking place in the diseased portion. My own, and the general opinion is, that in the large majority of cases, softening of the brain around the clot is a consequence of the pressure from the blood thrown out, the hemorrhage itself depending upon a disorder of the circulation. The cause of the deranged circulation is sometimes hypertrophy of the heart, which increases the impetus of the blood; at other times, the cause is to be sought for in a diseased state of the arteries and capillary vessels, either of the brain itself or of the whole system. But although the opinion of Dr. Rochoux is too exclusive, it is by no means unfounded, for there is a certain if not a large proportion of cases, in which the evidence is decidedly in favor of previous lesion of the cerebral substance. These cases are somewhat analogous to the hemorrhage which follows diseased uterus, or the advanced stages of pulmonary tubercles.

After the clot has been some time in contact with the substance of the brain, it is in a measure isolated by the formation of a cyst which completely surrounds it. It is afterwards gradually absorbed, absorption taking place in the following order: first, the serum disappears; secondly, the colouring matter; and, thirdly, the fibrin of the blood. After a lapse of some months, the cyst only remains, in one of two conditions:—it is either entirely hollow, and lined with a new serous coat, or a little cellular substance occupies the old seat of the apoplexy, and then the cyst is either imperfect or entirely obliterated. In one of these two forms the parts are invariably found.

This succession of lesions has been perfectly well illustrated by the cases which have been just now under our notice, for there are particular symptoms, corresponding to each stage of the disorder. One was that of the old woman, in ward No. IV., in whom there was a complication also of softening of the brain. For, in addition to the paralysis which follows hemorrhage, we have strong contraction of the flexor muscles on the paralysed side, so violent, that pain is given to the patient by an attempt to extend them. She had been well, we learned, two weeks before the attack, which determines it at once to have been of an acute character. The next point would be the manner in which it occurred,—was it sudden or gradual? This we cannot settle satisfactorily, from our inability to ascertain the previous history of the case.

The paralysis might arise either from acute softening or apoplexy, and as the distinctive characters of these two affections chiefly depend upon the abrupt commencement of the latter, and the more gradual progress of the former, it is evident that we cannot make a positive diagnosis. The rigidity which is so striking in the paralysed side of the body, is produced by softening, but this softening may be merely secondary to the hemorrhage. It does not take place in the beginning of apoplexy, it follows when the parts around the clot become inflamed; whereas, in inflammation of the brain, the numbness, stiffness, and rigidity follow in rapid succession, from the onset of the affection, and precede perfect paralysis. There is

another fact showing the case to be apoplexy; that is, the extent of the paralysis, which is rarely so great in inflammatory or non-inflammatory softening of the brain. In acute and sub-acute meningitis, as I have before remarked, attacking the summit of the brain, you have delirium of a more or less violent character, the mind being always compromised; if it involve the base of the brain, you have alteration of the functions of motion, as subsultus, spasms, &c., and the sight is affected, but, as there is no paralysis at first, you cannot confound these diseases with apoplexy.

Another point of some importance, in making a diagnosis of apoplexy, is to distinguish it, during the first few hours of the affection, from mere congestion of the brain. This is not so easy at first, as after the lapse of a few hours; but there are some peculiarities about these affections, which, if closely attended to, will serve to draw the line of distinction. In the first place, after the first few minutes of the loss of consciousness, which usually occurs at the beginning of both, there is paralysis of one side alone, in apoplexy. In congestion, on the other hand, there is scarcely ever complete paralysis of either, but there is generally some difficulty of motion in both. Persons attacked with apoplexy are not so commonly of the same full habit of body as those who suffer from active congestion, so that this plethora is alone sufficient to induce you to suspect the case to be congestion. A nice diagnosis, at the beginning of the two affections, is not very important; it is only after they have advanced beyond the first stage, that it becomes of consequence, as regards the treatment, to distinguish between the two. For every case, offering the symptoms of loss of consciousness, difficult breathing, turgescence of the vessels of the face, &c., but one course of treatment is to be thought of, the actively depletory. But after the subsidence of these immediate symptoms, cases which thus far offered the same character, demand a widely different plan of treatment.

I have already alluded to cases of effusion of serum on the brain, which are sometimes confounded with apoplexy from hemorrhage, and, are termed serous apoplexy—a term often used to denote the presence of comatose symptoms, without hemorrhage. This serous apoplexy may occur from the effusion of serum beneath the membranes, or into the ventricles of the brain; in the latter case, it is not infrequent in mania a potu, and also in some diseases of a chronic character. These cases, however, of comatose symptoms from serous effusion are of rare occurrence, except at the close of cerebral diseases of easy diagnosis.

Sudden coma, entirely independent of organic disease of the brain, sometimes appears, as the consequence of a previous chronic disease of various viscera, or even of mere anemia, under circumstances calculated not a little to puzzle the practitioner. A case of this sort occurred the winter before last, in my wards of the hospital. A seaman who had been exposed to great hardships, and had contracted a disease of the liver in the East Indies, of which he bore well-

marked evidence in a pale-yellow, jaundiced skin, came into the ward complaining of neuralgic pains in the feet unattended with fever. He had no symptoms whatever of disorder of the brain, or of the thorax; nor of the abdomen, except those indicative of a diseased liver. After remaining for a short time in the hospital, he was one night found with comatose symptoms, stertorous breathing, &c., having been seen, only an hour before, walking across the ward for a cup of water. I saw him only an hour before his death, in a state in which it was exceedingly difficult to arrive at a correct diagnosis; I, however, came to the conclusion that it was not apoplexy, from the fact of the symptoms not being limited to one side of the body. An examination after death revealed no alteration whatever of the brain, except a very trivial quantity of serum beneath the arachnoid. He had, therefore, coma, loss of consciousness, and stertorous breathing, during life, without any lesion of the brain.

Symptoms of the same character occur from the effects of heat upon the nervous system, during the warm season. During the intensely hot weather of the summer of 1830, I witnessed the opening of the bodies of twenty or thirty persons who died from this cause; we found no organic disease of the brain, but merely a slight congestion, such as is observed in other acute diseases, which it would be idle to set down as a cause of death. These were the appearances in those only who died suddenly of exposure to heat; for if time elapses for reaction to come on, inflammation of the brain may take place, but it is then a secondary affection.

The other two cases of apoplexy, occurring in the hospital, to which I shall direct your notice, offer varieties of the disease different from the first described. They were black men, who entered the wards in a state of complete paralysis of one side of the body, one of them scarcely able to speak. He could articulate but the monosyllable *no*, which he answered to all questions whatever that were put to him. He seemed conscious of the ridiculous nature of this invariable answer, but could not increase his vocabulary for several months, when he was gradually able to pronounce the shorter words, and now speaks very well, although there is still paralysis of one side of the body. In the other, the speech was merely thick, but his mind remained tolerably clear. They continued in this state for several weeks, and as the process of the absorption of the clot advanced, the intelligence brightened, but the paralysis remained. These were cases of hemiplegia, one side of the body being affected; that, opposite to the side of the brain, in which the hemorrhage occurred. This latter conclusion we drew from a law of pathology to that effect, which is almost without an exception in its operation. There may be one, two or three abnormal cases out of a thousand, but, in making your conclusion, you may safely leave them out of the estimate.

As the next consideration, in the study of the diagnosis, we had not only paralysis of the lower portion of the body, but also of the

upper extremity, and the muscles of the face, with disturbance of the intellect and senses, establishing, of course, the seat of disease to be the brain. The stiffness of the limbs was gradual in its progress, caused by inflammation around the clot; but the paralysis was, at the time of the patient's entrance, perfect; and the mouth was drawn towards the side which was *not* paralyzed, which is the reverse of what occurs in cerebral inflammation where the paralysis is active, that is, the mouth is drawn towards the palsied side. Our diagnosis and prognosis were at once made out; there was a hemorrhage on one side of the brain, and it was incurable, because the paralysis was complete, in which cases it is for life, the only chance of recovery being when it is incomplete.

The liability of apoplexy to return is a matter of notoriety, and a point perfectly well understood in the world; you should, therefore, in all cases where it has once occurred, be on the watch, looking for a recurrence of the hemorrhage, which nearly always takes place near the same spot, between the thalamus and corpus striatum.

The cases under notice were not fair specimens for testing the treatment proper for the paralysis of apoplexy; but some of you may recollect a case, which occurred last summer, of incomplete paralysis in a woman, which yielded entirely to treatment in a week. Dr. Foville of Rouen, explains the different success of the treatment in paralysis from hemorrhage by the occurrence in some cases of an actual rupture of the fibres of the brain, while in others these fibres are merely separated by the effused blood without being torn across. I am myself inclined to this opinion, and believe that the medullary fibres are actually broken in most cases of complete hemiplegia. The routine of treatment in apoplexy is simple and familiar to all medical men. Very free bleeding is of course indispensable, in all patients, who are at all plethoric; if of a pale, anemic complexion, it is to be practised with some reserve. Purgings, foot-baths, and cupping are to be resorted to, although the latter is not of the same value here as in meningitis, where it is our sheet-anchor. I here indicate merely the general outline of treatment to be pursued in apoplexy, not entering into any details on the subject. In regard to depletion, I may remark that it is a point of some delicacy to determine how far to carry it. My rule is, to continue depleting until the circulation in the vessels of the head is lessened, which is to be ascertained as well from the appearance of the eye and countenance as from the pulse. Purgings I also push to some extent; but you must be careful not to purge too violently, or that state of chronic softening of the mucous membrane of the intestinal canal, which was mentioned in a previous lecture as a frequent accompaniment of the exanthemata, may occur; it is a most unpleasant complication in paralytics, who rarely resist a diarrhoea long, however much they may have been previously benefited by purges. Blisters, setons, and issues, are all used in apoplexy, but with indifferent success, although the keeping up of a discharge by

these means, is excessively useful in chronic meningitis. If, however, the apoplectic symptoms are pertinacious, these remedies may be tried once or twice, and continued according to the effect produced.

If you are called to a patient suffering from apoplexy, after the full mischief of the hemorrhage is produced, and *perfect* paralysis is established, it is your duty to announce at once to the friends of the patient the impossibility of his ultimate recovery, explaining to them the nature and amount of organic lesions existing in the brain, and the impossibility of an entire cure.

The last point in the treatment of apoplexy to which your attention must be directed, is the sores which are likely to occur about the sacrum, trochanters, &c., if the patient is obliged to keep his bed for any length of time. The bladder is also apt to become diseased in this affection, and you must watch and guard against too long a retention of the urine.

I shall conclude this lecture, by saying a very few words on the subject of acute softening of the brain. This affection is distinguished from apoplexy, by the presence of fever, dizziness, and vertigo from the very beginning; while you will rarely observe any febrile movement, in cerebral haemorrhage, till some time after the effusion of blood has taken place. The numbness of the limbs, which is a common symptom in softening of the brain, comes on very gradually, and, although the intellect is feeble from the first, yet the impairment of its faculties is comparatively slow in its advance, there being at first, and for some time, merely dulness, and no active delirium afterwards. In a black man, under my care, four years ago, at the Pennsylvania Hospital, the delirium assumed the character of well-marked mania. This maniacal delirium is different from the more active kind occurring during the inflammation of the membranes and cortical substance of the brain. It is an affection which rarely occurs, except in the young and middle-aged, and is not to be classed with chronic softening of the brain, which is a sort of necrosis, or gangrene of this organ, and is met with only in old persons. In this latter disease, there is no active febrile movement whatever, the patient advancing, with unfailing certainty, from bad to worse, to death. The affection is dependent, according to Dr. Carswell, on a cartilaginous condition of the blood-vessels. Dr. Rostan, of the Salpêtrière Hospital, observed the disease on a large scale, and has published a monograph upon the subject, in which he states it to be beyond the reach of treatment. In this country, I regret to say, that our experience does not materially differ from that of Dr. Rostan.

The acute softening is, then, nothing but cerebritis or inflammation of the brain, while the chronic disease is almost the reverse of inflammation. As the latter affection is incurable, and occurs exclusively, or nearly so, in very old people, it is of little importance in a therapeutic point of view: but the acute softening may be cured in many cases if treated vigorous from the first. This treatment is

similar to that recommended for meningitis, except that general depletion should be much more insisted upon; local bleeding being of comparatively little value, at least in the early stages of the disease. The pain is often so slight in this disease as to lead the observer into an erroneous belief, that there is but little the matter with the patient, until the paralysis or decided mania supervenes. Hence a numbness of the side, if connected with disagreeable sensations in the head, or many signs of vascular congestion, ought to be treated with energy.

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## LECTURE VIII.

Apoplexy and inflammation of the brain (continued).—Functional diseases of the brain.

I SHALL, this afternoon, again call your attention to some organic and functional diseases of the brain. It was my intention to have confined myself to the subject of functional cerebral diseases, but, owing to the termination of one of the cases of apoplexy, followed by acute softening of the brain, noticed in the lecture on these subjects, at the post mortem examination of which some of you were present this morning, I am induced to recur to the topic. The impossibility of understanding the subject of organic diseases of the brain without a knowledge of their pathology, is well exemplified by the case under consideration, while, on the other hand, you have seen how exactly the phenomena after death coincided with what we were able, from the symptoms during life, to announce would be the case, and how entirely the prognosis as well as diagnosis has been confirmed by the result.

This case was that of Fisher, one of the blacks alluded to in Lecture VII. He entered the hospital a short time after having been seized with loss of consciousness, and other symptoms denoting an attack of apoplexy. The inflammation, excited by the clot of blood thrown out, induced an inflammatory softening of the structure of the brain, which seems sometimes to be a useful process, and promotes absorption of the clot; it occurs from the same cause that gives rise to inflammations wherever a foreign substance is present in any portion of the body. The train of symptoms, announcing the existence of acute softening of the brain, we treated by cupping, purging, and a regulated diet, not using general bleeding from the enfeebled condition of the patient. Under this treatment, he was slowly getting better—he could crawl about the ward, and could articulate short sentences, when yesterday he was seized with a fit of convulsions, as the nurse termed it, and was found by one of the resident physicians in the state of coma, with dilated pu-

pils, &c., which soon terminated in death. The examination after death, this morning, explained the occurrence of these symptoms.

We found, first, the remains of the old apoplexy, which had taken place a year ago, probably a few days before the man's admission, as nearly as we could gather from his imperfect account of himself. The disease had occurred at several different points of the left hemisphere of the brain. The left corpus striatum was shrunken and shrivelled up, and unnaturally hard and indurated. On incising it, at the depth of the eighth of an inch, a well marked cyst was found, rather more than an inch long, and half an inch broad, lined with the usual serous membrane, which was not quite complete; a part of the walls of the cyst were composed of loose cellular substance, filled with an opaque liquid. This serous membrane, lining the cavity, was not a true but an adventitious serous membrane, or rather sero-cellular, such as is thrown out in inflammation of the pleuræ and pericardium.

I have already told you, in a previous lecture, that these cysts are left after the complete absorption of the clot of blood. The evidence that they really arise from this cause is entirely complete; it might, indeed, be inferred from the facts which relate to the cases just pointed out; but if you are not able to follow every step of the reasoning, I would refer you to the work of Dr. Rochoux. The cyst in question occupied one of the usual seats of cerebral hemorrhage.

In addition to these morbid changes, there were the traces of a large apoplectic extravasation on the side of the brain, the conformation of which was obviously altered by a depression on the middle lobe of the left hemisphere, just behind the temporal muscle, quite unconnected with any alteration of the bone.

The membranes adhered very closely to the substance of the brain, and beneath them was a partial softening of the medullary substance, which was of a light yellow or cream colour to the depth of about an inch, with complete destruction of the cortical substance in a space of two and a half or three inches square, that is, in the whole extent of the depression, necessarily rendering that portion of the brain totally unfit for use. At the posterior part of this softened portion was an imperfect cyst, more than an inch long, the walls of which were formed by a loose cellular substance, extending to the distance of from a quarter to a third of an inch. Near the centre of the same hemisphere, about an inch from the summit of the brain, was a third cyst, scarcely an inch long, of about half that breadth, and somewhat flattened. Its walls were formed by a hard and yellow medullary substance, and it was filled with a transparent liquid. One-fourth of the left hemisphere of the brain was, you thus see, destroyed; it was, besides, distorted and drawn back, to a degree that I never before witnessed; even the anterior portion of the brain was turned partially round and backward; this distortion may have interfered not a little with the exercise of the functions of the brain, and was the necessary result of cicatrization after a complete loss of cerebral substance.

From this disorganized condition of the brain, which rendered a large portion of it as useless as if it had been separated from the body, and caused the entire removal by absorption of another part, you may understand the cause of the complete paralysis of the right side of the body, and its necessary incurability, which I predicted. But in addition to the immediate consequences of the apoplexy, other changes had taken place in the brain, not necessarily the result of hemorrhage; these were connected with the recent active inflammation, from which the patient perished, as was shown by the softening around the old cyst.

A symptom worth noticing was the loss of power of articulation, under which, you remember, the man laboured for a long period; his answers were confined to the word no, and were afterwards brief and confused. Now there was no lesion, except that caused by the contraction, in the anterior part of the brain, which, of course, disproves Bouillaud's assertion, that the vocal powers are connected with this portion — a point which had, indeed, been previously satisfactorily settled by the observations of Andral and others. In this instance, the cortical substance of the brain was affected, although not in the anterior portion; the cortical substance, I have no doubt, presides over the functions of the intelligence and of the voice. The corpus striatum is supposed to preside over the faculties of motion of the upper extremity; and here, you see, the patient regained the power of walking, though not that of moving his arm. This, however, proves nothing; for it is a regular occurrence in hemiplegia following apoplexy.

The therapeutics of this case are important; the impossibility of curing it is sufficiently evident, and consequently, the necessity of confining your efforts in similar cases to such a plan of treatment as will palliate and improve the symptoms. Hence too, you may doubt as to the propriety of addressing stimulating remedies to the brain and nervous system, as *nux vomica*, or its active principle *strychnia*, to relieve a paralysis dependent on destruction of the cerebral structure. These remedies were much in vogue at one of our institutions a few years ago, for the treatment of apoplectic hemiplegia. I witnessed most of the cases, and I never saw them produce decidedly good effects, although pushed so far, in some cases, as to produce convulsions. Many patients, afflicted with hemiplegia, in a degree recovered; but this occurred from the mere process of absorption of the clot, and not from the effect of the remedy. Indeed, I must candidly express my opinion against the usefulness of the remedy; and I am convinced that it often increases the activity of the circulation in the brain, surrounding the clot, from the over-stimulation of this organ. It is a valuable remedy in neuralgic paralysis, where there is functional disorder of the brain, or mere want of tone in the limb; but when there is any considerable derangement of the cerebral structure, I am quite sure that it is often a hurtful medicine, even when given in minute doses, and suspended as soon as its effects appear. I make these

remarks upon the strychnia, because its use seemed indicated in one of these cases of paralysis; and although I anticipated but little effect from it, I consented to its administration; but it very soon became necessary to suspend it, from the increase of the difficulty of speech, and rigidity of the limbs. I am aware that many physicians of high judgment employ and recommend the strychnia; but my own observations, which were the more unbiassed, as they were made upon the practice of others, and not upon my own, have led me to a different conclusion. The true therapeutics in paralysis from apoplexy, consist first in subduing the inflammatory symptoms or the active congestion of the brain, by blood-letting, appropriate applications to the head, and purging; afterwards in waiting patiently and quietly, in keeping from the patient all causes of irritation, and in regulating his diet; and after the clot has been removed, in addressing gentle stimulation to the paralysed part; or what is better, in directing the patient to move it himself. Even this slight, and, as it were, natural mode of exciting the brain, may be attended with inconvenience. I lately directed a patient, in whom the paralysis was already of some month's standing, to move his arm every day by a powerful effort of will, and he went on until he succeeded in raising his hand to his head, but the brain became excited, he was stupid, and his speech thicker, and I was compelled to make him desist. Avoid, then, all causes of excitement, whether medicinal or other, in these cases of paralysis, which are either the mere effect of a considerable rupture of the fibres of the brain, or are connected with the subsequent inflammation till very late in the treatment, and let it be confined to external stimulation.

The case which we have just been noticing, illustrates extremely well the advantages of a knowledge of pathological anatomy, in the study of diagnosis. We were able to define with exactness the morbid condition of the brain as you may see from the previous lecture, which corresponds precisely with that which a post mortem examination has laid open. Now this verification, by means of examination after death of the lesions in a certain number of diseases, enables us to form a much more vivid and distinct picture of the state of the analogous cases. We conceive, as it were, in our mind, a well-defined picture, and by a sort of second sight, can discover most of the changes, which are, under ordinary circumstances, completely concealed. If we gain but little direct assistance in therapeutics from pathological anatomy, we obtain a sort of touchstone, by which we judge of the power of remedies, and thus acquire more accurate notions of the effect of medicinal agents; we learn to discriminate between the natural course of a disease and the modifications impressed upon it by art. In itself, pathological anatomy is a mere instrument; but by its aid we are enabled to know positively a multitude of facts, which we can barely conjecture from the unaided study of symptoms. Now, I would impress upon you the necessity of not attaching an exaggerated

importance to what is a mere means of investigation ; you must never isolate the lesions of an organ from the symptoms which accompany them. I am the more earnest in insisting upon this matter, because you might imagine, from the careful pathological investigations which I endeavour to make, that I value this sort of knowledge for its own sake ; this would be an error in which I should be loath to fall.

In concluding these lectures upon diseases of the brain, I have some few remarks to make upon certain functional affections of that organ, occurring during the course of various disorders of the body. These affections are very numerous, and often not a little puzzling in their character. For example, you no doubt supposed, when listening to the detail of symptoms denoting tubercular meningitis, that the features of the disease must be always clearly marked, and yet there are affections that sometimes simulate it to a degree that will embarrass a very experienced observer. It is no easy matter always to distinguish between diseases of the brain itself, and those which are symptomatic of other affections. Now, this can only be done by becoming so familiar with these functional changes, that you may at once hold them up, as it were, in your mind's eye, and diagnosticate between them and the true cerebral diseases, by a rapid process of comparison, or as it is sometimes termed, by way of exclusion. That is, you run over the list of these analogous disorders, and then rapidly leave them out of your calculations, because some essential symptoms may be wanting.

First, in fevers, intermittent and continued, particularly the latter, there occurs a train of cerebral symptoms which are placed amongst the most important symptoms of these disorders. Continued fevers, in this section of country, are almost wholly the typhus and typhoid fevers, with the exception of the occasional occurrence of such as are styled bilious and ephemeral, and are in themselves of little importance. In Paris, continued fever rarely takes any other type than the typhoid ; while in Ireland and Great Britain, it is generally the typhus. In both these fevers, the brain is affected at the commencement, but in a less degree than in meningitis, the early symptoms of both being headache and dizziness, with loss of strength. In the second stage, there is stupor of great intensity in typhus, and of slighter in typhoid, often running into delirium. We have, at this time also, in typhus, considerable disorder of the nervous system, indicated by spasms and subsultus, resembling those which occur in delirium tremens. The senses also, are impaired in the second stage of both these affections, but more severely in typhus than in typhoid fever. In the last stage we have coma, complete loss of the powers of intelligence and of motion, and very nearly complete suspension of the senses. Sometimes we have violent, noisy delirium, which is to be looked upon as an irregular symptom, usually depending upon an accidental complication of meningitis with the fever ; when this violent deli-

rium occurs, it is always to be considered and treated as a secondary meningitis. The ordinary moderate cerebral symptoms, are, as it were, essential to the disease, and do not demand special interference, unless they should become intense, when they may be the immediate cause of death, and must then be treated as inflammations of the brain, by local depletion with cups and leeches, and by cold to the head, and the like. If this secondary meningitis of fever occur very late in the disease, general bleeding is not often advisable. Treatment, although useless in slight cerebral symptoms, becomes essential when they reach a high degree of activity. After coma supervenes, it is proper to abandon a depletory course and the cold effusions, and you are now to resort to counter-irritants, sinapisms to the feet, blisters to the nucha, and to the temples or over the posterior part of the head — remedies which are improper during the violent stage of the secondary meningitis. In the partial epidemic of typhus which occurred last winter, the fever was attended with more active cerebral symptoms than had previously shown themselves. I used local treatment, in nearly every case, with extreme advantage, and found that, after removing the meningitis, the fever was almost free from danger.

In the intermittent and remittent fevers, the functions of the brain undergo alteration, although there is rarely active inflammation of the organ. There is less disturbance of the powers of motion than in typhus and typhoid fevers, subsultus seldom occurring. The senses are not affected, except in the height of the paroxysm, there is little ringing in the ears. These symptoms, however, are sometimes present in the malignant intermittents that we meet with in our hospitals, in the summer, occurring principally in sailors who have contracted the affection on the coast of North Carolina. In such cases, local depletion is not often advisable, for the cerebral symptoms are not confined to the paroxysm, nor do they resemble those of acute meningitis; they are rather loss of memory, sighing, and other signs of enfeebled nervous energy. They are best managed by large doses of quinine during the interval, and during the paroxysm by wine and volatile alkali. Upon these symptoms the danger of malignant intermittents chiefly depends. Of course this mode of treatment is not designed for those cases in which there are signs of more active vascular excitement, requiring the treatment of the acute cerebral symptoms of typhus, or to cases in which the face presents a deep red or purple flush, as is the case in the apoplectic form of congestive disease.

In pneumonia, there is usually some slight disturbance of the brain, which, indeed, accompanies, in a greater or less degree, all febrile affections. Special treatment is required, only when there is either active delirium, or much stupor. When these exist, the case may be very readily mistaken by one not well accustomed to recognise pneumonia. In the cerebral complications of pneumonia, the peculiar flush of the face, the dyspnoea, and dilatation of the

nostrils, serve to distinguish the nature of the affection, while, if there be meningitis of a primary character, it will be marked by the brightness or injection of the eyes, frown of the forehead, and absence of the purple hue, and dark red flush. In the cerebral complication of pneumonia, a special treatment is occasionally demanded, consisting of purging, and antiphlogistics directed to the brain.

In inflammations of the serous membranes of the thorax or abdomen, the brain is rarely implicated, except to a slight extent, corresponding with the vascular excitement. The same may be remarked of inflammation of the mucous membranes; in that of the bowels, the functions of the brain are not usually disordered, except in the last stage. If, however, the mucous membrane of a large extent of the alimentary canal be simultaneously attacked, then the brain sympathises, and delirium very commonly ensues. In very severe epidemics of malignant dysentery there is also extreme prostration of the nervous functions, somewhat similar to what occurs in intermittent fevers.

The connection between functional disorder of the brain and anemia, was alluded to in the last lecture, and illustrated very strikingly, by the history of a case which I then detailed. The sympathetic affection of the brain, in jaundice, is well known. We have a patient at this time, in the hospital, labouring under chronic gastritis and jaundice, in whom this cerebral alteration, depending on jaundice, is very manifest, and last year there were several marked cases of this kind. It is not, at least at first, of an inflammatory character; the symptoms being merely stupor and prostration, with subsultus, and particularly, loss of the memory. This set of symptoms indicates the connexion which exists between this affection and malignant intermittent and remittent fevers, and in both it depends, in my opinion, upon the altered state of the blood which accompanies hepatic disease. Treatment is to be confined almost entirely to sinapisms and blisters, and occasionally some slight stimulants in addition to the general treatment for jaundice — cupping or other depletion should be rarely used. But if the more settled and acute symptoms of meningitis supervene, the treatment must at once be antiphlogistic. Dr. Marsh, an Irish physician of eminence, has also called the attention of the profession to the cerebral symptoms of jaundice, and recognises their great danger. Anemia, dependent on a vitiated condition of the liver, is attended with many cerebral symptoms, sometimes these belong rather to the nervous system and spinal column than to the brain; in other cases there are many signs of disturbed action of the brain itself. It is to be treated by tonics, iron, porter, and a generous diet. But in many disordered conditions of the cerebral functions, the proper remedies are to be found amongst the narcotics and antispasmodics. On the same principle is based the practice, recommended by Dr. Graves, for the sleeplessness and slight delirium in the latter stages of typhous fever, consisting in a combination of opium and tartar

emetic. This is an excellent remedy; the antimonial slightly nauseates, promotes gentle perspiration, and predisposes to sleep. The virtues of Dover's powder depend on the combination of opium with an analogous medicine, ipecacuanha, and, if the alimentary canal be in an irritated condition, this combination is to be preferred.

I have entered thus minutely into the detail of these functional cerebral symptoms, and into the points which distinguish them in different affections, because the symptoms, which are laid down in books, are more or less analogous in all these affections. The order of symptoms, however, is very different, and diagnosis becomes comparatively easy if we attend to their successive development.

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## LECTURE IX.

Delirium Tremens.—Symptoms.—Stages.—Varieties.—Complications.—Treatment.

DELIRIUM tremens is an affection which has special claims upon your attention, from the lamentable frequency of its occurrence in our country. It is here, amongst the labouring classes, particularly the Irish,\* one of the most common of diseases, although in France and other continental countries of Europe, comparatively rare. During my residence in Paris I did not see a single case of it: in the hospitals of that city it is a disease that is never thought of, in patients who enter with cerebral symptoms, although with us cases of delirium tremens are more numerous in our hospitals than those of all other cerebral diseases together.

I now present a case of simple delirium tremens. The patient has been a drunkard from his twelfth year, and he is now upwards of forty; the fit of intoxication which gave rise to his present disorder commenced before Christmas, and continued until his entrance into the hospital a few days since. On looking at this man, the first thing that strikes your attention is a universal restlessness; the whole body is affected with tremors; when he holds out his hand, he is unable to keep it still; his tongue when protruded, is similarly agitated, but not to the same degree. Besides these tremors, last night, and several preceding nights, the patient was affected with hallucinations of mind; these are still present, but are much less manifest than they have been. As I have stated in a previous lecture, *fear* is an almost constant characteristic of these hallucinations of delirium tremens; but the *fear* is less of present, than of absent and

\* The very happy reformation which has taken place among the Catholic Irish requires this statement to be modified.

imaginary objects. From this fact we derive an important lesson in the treatment of this disorder; that is, never to excite the fears of the patient, but to relieve them as far as possible by permitting him to have free intercourse with others; this will divert his mind from those terrifying objects which his imagination brings before him. The patient is always conscious of these hallucinations until his intelligence is entirely destroyed. They are most frequent and distressing when he is shut up in a cell; in company they are much less so, and more under the control of his mind.

In consideration of this subject, the important question occurs to us, what is mania a potu, or delirium tremens? It is not inflammation of the brain or its membranes; for the symptoms of these diseases are constant; there is a permanent disorder of intellect, and a lesion of muscular power throughout many parts of the body. In delirium tremens, on the contrary, there is no such constant and decided muscular disorder; there is no rigidity or paralysis, but only agitation and inability to keep still. Nor is there any positive defect of vision, or of the other senses, other than illusions or hallucinations; they are still perfectly retained, and entirely under the control of the patient. The condition of the intellect is likewise different; in inflammation of the brain there are rarely hallucinations, properly speaking, but a more or less complete destruction of consciousness and aberration of intellectual power; in both these respects, we observe an opposite condition in delirium tremens. This marked difference in the symptoms is explained by a reference to the pathology of the two diseases. In inflammation, there is injection of the membranes or substance of the brain, with thickening of the former, and various other organic lesions. In delirium tremens there is no organic change; the only abnormal appearance which can be detected, is an effusion of serum into the ventricles of the brain, and a preternatural moisture of the cerebral substance. This superabundance of fluid arises from the continued irritation to which the brain is subject, and the slowness with which it occurs; it is not the cause of the symptoms; they are produced by the irritation, which, after it has continued for a longer or shorter period, gives rise to the effusion. The two diseases also differ in their progress. Mania a potu, like measles, scarlatina, &c., has a definite course and a natural termination; it must disappear after a certain time, unless the attack be a very severe one. No treatment is of any further use in the mild cases than to diminish the inconveniences of the disorder; any treatment which is not directed to this simple end, proves injurious by irritating and harassing the patient.

Delirium tremens begins in two different ways. The most common is that in which from some cause, as accident, disease, or resolution of the patient, or inability to obtain intoxicating drinks, the patient suddenly gives up his accustomed stimulus. This is the most simple variety, and under ordinary circumstances, after a period of restlessness of two to three days, passes through a natural crisis, consisting in a prolonged sleep of some hours, and terminates in

recovery. If no untoward circumstances occur, the sleep will follow of itself, and the disease is therefore strictly a self-limited one; treatment merely assuaging the suffering of the patient and diminishing the mortality. The second mode of invasion is that in which the delirium tremens is most apt to be complicated with inflammation or congestion of the brain or stomach, or with convulsions. The patient continues to drink freely until his attack, but the stimulant is taken irregularly, or acts irregularly, strongly exciting the brain at one moment, and then leaving the patient in a state of depression. The circulation is often much excited, and the face flushed, and the eyes injected. These cases are apt to be attended with convulsions of a mixed form, sometimes resulting in apoplexy, at others epilepsy. These convulsions sometimes, though rarely, occur immediately on a debauch, more frequently, however, they take place in patients who are in a state of vascular as well as nervous excitement from intemperance, and suddenly abandon all stimulants. The convulsions, and indeed this variety of the disease, are not so frequent in the poor as in those who, with more means of gratifying their vicious desires, are sunk into greater debauchery. The hallucinations and other disturbances of the intelligence are less marked in this variety than in the ordinary form. We may state this by saying, that the vascular and nervous symptoms are more developed, but the intellectual less so.

For the study of ordinary delirium tremens, it is convenient to divide the disease into three stages:—

(a) *First Stage.* This is well known amongst drunkards as the *horrors*: a term which expresses the aspect of the patient, which is that of extreme anxiety and agitation, and the distressing feelings of fear which the patient experiences. This anxious alarming expression is one of the most characteristic symptoms of the disease, and with the tremor, which is equally remarkable, it constitutes the only pathognomonic character. The tremor extends to the whole muscular system, but as it may be to a certain extent restrained by a voluntary effort of the will, or by supporting the weaker muscles of the limbs against the trunk, it is sometimes not very obvious unless the patient is directed to put out his tongue, or to hold up his hands, where it is at once perceived. The restlessness and tremor are the most frequent and important symptoms of the first stage of the disorder, but are by no means the only ones; the others, however, are only accessory or secondary, and vary with each patient. As a general rule, the pulse is feeble and frequent, the mind is unable to direct itself long to any single subject, and the pupils are slightly contracted. The complexion is extremely variable; it is often pale if the patient has not been long addicted to intemperance, but, in the majority of cases, it retains the usual tint of the drunkard's countenance. The appetite fails, the bowels are often constipated, and there is generally more or less thirst. In this stage of the complaint the restlessness continues throughout the night, and of course the patient is unable to sleep: sometimes, the sleeplessness is the

first symptom of the disease, but in the majority of cases it attends the restlessness, and is strictly proportioned to it. The agitation may gradually subside and the patient recover, or the disease may pass into the next stage.

(b) The *second stage* of the complaint presents the same symptoms as the first, but in an exaggerated degree, the tremors, restlessness, and insomnia are increased, and the appetite is more completely destroyed. The pupils are more contracted; if, however, the patient has not taken opium, the contraction of the pupils is never very great. The distinctive symptom of the second stage, is the illusions which at first occur only at night, when the patient is left alone, and in the dark. These hallucinations are perfectly under the control of the understanding when the courage of the patient is revived by light and society: he is then perfectly aware of their nature, and will often laugh at his own fancies. The illusions are not confined to the night, if this stage become more confirmed, but they still remain perfectly under the control of the will and of the intelligence; if the disease continue, the illusions become more and more frequent, and cease to be recognised by the patient, that is, they are completely confounded with real objects. The attention may still be directed to surrounding objects, and the patient is capable of answering ordinary questions with perfect correctness, if he is addressed in a sharp, decided tone of voice, and there is no incoherence in his answers, so long as his attention can be commanded. These illusions are nearly always of an alarming kind, and are as varied in their nature as the objects which happen to be most familiar to the patients; devils, guns, fire, serpents, and the like, are the most common objects of his fear. At other times he feels a vague dread that his life will be taken, and earnestly entreats that it may be spared. These illusions are so well characterised, that they have always been regarded as the essential character of true delirium tremens; this is nearly but not absolutely correct, for, in some cases, the tremors are not attended with illusions, but on the contrary, the mind of the patient is almost clear, and the disease may prove fatal, although no illusions present themselves, by the occurrence of convulsions or sudden insensibility. Still, in the regular simple variety, of which I am now treating, the illusions may be regarded as a constant symptom. The other symptoms of the second stage are not pathognomonic, and with the exception of the countenance, which retains the same restless expression as in the first stage, are not even characteristic. The pulse is frequent, and generally small, the frequency evidently depends rather upon the extreme agitation of the patient than any regular connection between the state of the circulation and the disease. The appetite rarely returns during this stage, although this is sometimes the case; the tongue is generally furred, but rarely dry. The skin remains moist throughout this stage, and if the efforts of the patient to escape from confinement be constant, or if his agita-

tion be very great, the sweat is often very profuse. This sweat is of a different character from that which generally occurs during the third stage of the disorder, and seems to be strictly dependent upon the constant exercise which the agitation of the patient obliges him to take. The second stage may gradually decline, and the patient fall asleep, and recover; or it may pass into the next stage. Sleep is nothing but the indication of the recovery; it follows rather than precedes the decline of symptoms. The insomnia arises from the extreme nervous disturbance which is the essential element of the disease, and although the fatigue of the patient may be extreme, he is still altogether unable to sleep. Let the nervous agitation be quieted by any means, and sleep will immediately follow, and will finally complete the restoration. This is the true rationale of the close connection between sleep and recovery, which has certainly been misunderstood, and has led to erroneous deductions as to the treatment of the disease. If the disease be completely removed, the patient will sleep for a long time, and will generally awake perfectly restored. In some cases, however, the recovery after prolonged sleep is not complete, but the disease recurs again, and is not completely cured until a day or two afterwards. If the prolonged sleep occur naturally, it is always productive of great relief to the patient, but if it be forced by the operation of narcotics in large doses, instead of conducing to recovery, it will sometimes end fatally, and the patient may then die without awaking. A short sleep of one, two, or three hours is refreshing, but is not usually followed by immediate recovery, although it affords an evidence of the gradual decline of the disease. If delirium tremens be well treated, or if the disease be essentially mild, but few cases pass beyond the second stage; recovery taking place without difficulty.

(c) The *third stage* is attended like the others, with a symptom which is characteristic; that is, incoherence. The illusions either cease, or they are no longer connected,—the patient passing from one object to the other with great rapidity, and not reasoning correctly or connectedly upon the images which are presented to his mind. He becomes feeble, but is, at the same time, extremely agitated, and can only be retained in bed by the constant watchfulness of an attendant, or by straps or bandages. The sweat becomes profuse, the skin sometimes cold, at others warm, and pupils greatly contracted. The contraction sometimes ceases before death, and may be succeeded by a morbid dilatation, if there be much serous effusion upon the brain. The senses become gradually more and more obtuse, from the first appearance of incoherence; the patient generally loses his power of attention, and can with great difficulty be induced to direct his attention to surrounding objects, and as the disease advances, he becomes completely comatose, and generally lies in a state of insensibility for some time before death. The pulse gradually fails during this period, and the patient often presents symptoms of nervous disturbance, which are very analogous to those which take place in cases of typhus fever, such as

subsultus, spasmodic tremors of the muscles generally, and muttering delirium.

Emetics have frequently been employed for the cure of this disorder. They act by producing relaxation and diaphoresis, and in some cases this practice succeeds very well. But in other cases, (especially in that sort which is not unfrequently met with in private practice, where the disorder is brought on, not by a fit of intoxication, but by a long course of free drinking,) emetics may do a great deal of harm ; instead of tranquillizing the system, they sometimes produce a great deal of prostration, which, in some cases that I have seen, has undoubtedly been the cause of death. Tartar emetic is particularly liable to this objection.

Of the various other remedies employed in the treatment of delirium tremens, opiates have probably received most attention. I formerly used these remedies in almost every case, though not in as large doses as some of my brethren ; but when I was a resident physician in this hospital, we were directed to give opium in very large doses, — frequently as much as four grains every two or three hours, until sleep was procured. The patients, for the most part, got well under this treatment ; but in estimating the value of a particular plan of treatment, we ought to consider the proportional success of this and other plans. A comparison of this sort will prove that opium is not the most effective remedy in mania a potu. In conjunction with this remedy certain hygienic regulations were also enforced at the time to which I have alluded. The patients were locked up in cells, and if very disorderly, that is in every severe case, they were confined in a straight-jacket, or tied in bed, with gloves and straps.

The practice of the hospital has never been to give opium to the exclusion of other remedies ; it was always the custom to use cups and cold applications to the head, purgatives and various other remedies, when they seemed necessary. From time to time a change would be made in the practice and the affection would either be treated upon empirical grounds, in accordance with the varying symptoms, or the emetic practice would be pursued.

But the plan of treatment, by opiates and confinement, is the one that was almost universally practised in Philadelphia several years ago, with variable results. In my own practice I have gradually diminished the quantity of opium which I formerly gave, and for some time past have not used it at all. Instead of it, I have relied in bad cases upon the stimulant treatment which had been always followed in some plans ; that is, the use of stimulating remedies, particularly alcoholic liquors. These articles I first employed in conjunction with opium, or prescribed them without opiates, in two different conditions : 1st, in the slighter cases, or those of incipient delirium tremens ; or 2dly, in the severe cases where opium had been employed but was followed by distress of mind and stupor. But at present I use them singly. This treatment has diminished the mortality of the disease. The change which I have adopted in the hygienic rules has also contributed very decidedly to this result.

Instead of confining the patients, I let them walk about and enjoy the company of others as much as they choose : merely taking care that some one should be near them to prevent accidents. I was led to this change by observing that the hallucinations which attend the disorder were more distressing when the patients were in a state of confinement than when they were allowed to walk about as much as they wished. As I have already remarked, they are capable of controlling these hallucinations, until the intellect is entirely destroyed ; and they can do so the more easily when they are surrounded by objects which serve to engage their attention. Confinement always irritates them, and increases their ravings, so that the third stage, in which the intellect is entirely destroyed, is apt to be brought on very speedily. I have very often tested this by a simple experiment ; a man who was confined to his bed by a straight-jacket or something of the kind, I have frequently directed to be dressed, have soothed him by conversation, and after requiring a promise that he would conduct himself with propriety, I have very seldom found reason to be dissatisfied with the result. On the contrary, the disease would almost invariably become milder, and the necessity of confinement cease. It is true that confinement is often necessary at night, from the impossibility of always providing a sufficient number of attendants. I therefore (with the exception just stated) allow the patient to have full liberty, the only restraint being the presence of the keeper : sometimes, also, I direct them to be set at work, which serves still farther to distract their attention.

The proportional mortality under the two plans of treatment which I have detailed, is represented in the following summary, comprising the number of cases treated amongst the men for the space of  $5\frac{1}{2}$  years—that is, from the 20th of May, 1834, to the 13th of November, 1839. The whole number of cases admitted for delirium tremens, or intemperance, which was expected to terminate in delirium tremens, was 1241. Of these, there were 1198 whites, and only 43 men of colour. Of the whole number, 708 were decided cases of delirium tremens, 60 were slight cases, and 430 cases of mere intemperance. Of the latter, some terminated in decided delirium tremens, and others proved fatal from diseases (such as pneumonia) contracted during the fit of drunkenness, for which they had been sent to the lunatic asylum. So that this class furnishes a considerable number of bad cases. Of the whole number 121 cases proved fatal. That is, a fraction less than one in ten.

In the first year, from May, 1834, to the same date, 1835, the number of admissions was 141 ; of these, 18 died ; that is, rather more than one in eight. In the second year the number of cases was 211, the deaths 24, or a little more than one in nine. The third year, in 301 cases, there were 47 deaths, a much larger proportion than in preceding years, one in  $6\frac{19}{47}$ ths, but depending upon an accidental cause, that is, the coincidence of 'an epidemic' of typhus, which attacked many of the debauched subjects of intemperance : some of

them were sent to the lunatic asylum as labouring merely under the effects of intemperance, and could not be afterwards removed to the proper ward.

In the fourth year, beginning May, 1837, of 206 cases, 19 only proved fatal, that is, about one in eleven. This was a decided amelioration, and coincides precisely with the epoch at which the change of practice was introduced.

In the fifth year the mortality went on diminishing, and was less than one in twenty-six; or of 274 cases, 9 only were fatal; and amongst these cases, the mortality was certainly greatest in those which were treated chiefly according to the method formerly pursued at the hospital.

Finally, in the six months, ending November, 1839, the mortality was only one in  $33\frac{1}{4}$ , that is, 4 cases out of 135; and of these four, one entered moribund, and was not, therefore, treated in the hospital; another had inflicted upon himself several fractures and other injuries, by leaping from a third story window, in a fit of delirium tremens, previously to his entrance. The others, it is believed, were also complicated cases.

The preceding summary of the results of the treatment, is extracted from a lecture which I delivered at the Philadelphia Hospital, in December, 1839. The results of the treatment for the last year, up to October, 1840, have been still more satisfactory. The number of cases of the sequelæ of intoxication, and of delirium tremens in the three stages, admitted into the men's wards of the Philadelphia Hospital, from October 12, 1839, to October 12, 1840, is 223. Of these, 61 were classed under the head of intoxication or its immediate sequelæ, some of them passing into delirium tremens. If we exclude the whole of these 61 cases, there remain 162 cases of decided delirium tremens; of these, 87 were admitted in the first stage, 73 in the second, and 2 in the third: 160 cases recovered, and one remained convalescent, who is since well. (Oct. 16.) One only proved fatal: this patient was admitted in the third stage of the disease, and died in a few hours after his entrance; he had been treated with opium, and a box of pills which he was taking, were sent to the hospital with him. Of course, this apparent exception confirms the general conclusion, that the disease terminates favourably in every instance, when treated according to the method recommended.

Up to the present date, August, 1841, from November, 1840, the mortality, including complicated and moribund cases, has been about one *per cent.* That is, in no case in which the stimulant practice was thought necessary did it fail, except in those in which, from the late admission of the patient, or some other accidental cause, it was not fairly tried; and counting all such, the ratio still remains insignificant; while the opiate practice yielded a large mortality under the same circumstances. I do not, however, think it necessary to resort to alcoholic stimulants in slight cases; and still less in the slight gastric nervous disorder which follows sim-

ple intemperance, but does not amount to delirium tremens; sometimes it is better to avoid them carefully under these circumstances.

The plan of treatment which I have found to answer best, is as follows:—

If a patient come under your care partially intoxicated, but still labouring under some of the premonitory signs of delirium tremens, give him an emetic of ipecacuanha: he will in general be disposed to sleep after its operation; when he awakes, or soon after taking the medicine, if he does not sleep, he will complain of gastric uneasiness, and often of slight nervous symptoms. Fresh air, exercise, and a strong infusion of gentian, or some other bitter, with capsicum or ginger, will then do much to allay the irritability of the stomach and diminish his discomfort. Alcoholic stimulants are not necessary in such cases; and these simple remedies constitute my usual treatment.

If the disease promise to become more protracted, a mixture of lac assafætidæ, with tincture of valerian (ammoniated), and Hoffman's anodyne, (3ss. of each of the latter remedies with 3ij. of lac assafætida every two hours,) are of great benefit in tranquilizing the patient. As a drink, he may take a bitter infusion with an aromatic. These remedies with exercise, and as nutritious a diet as the stomach of the patient will bear, are sufficient.

If the disease become more decided, and pass to hallucinations, especially if these are not recognised as such by the patient, the stimulant practice may be resorted to. The severity of the disease from the first is, however, a better guide than the mere occurrence of hallucinations. Thus, if the disease be very violent, even before any hallucination can be detected, the patient may take alcoholic stimulants; but it is especially in those cases in which both tremors and hallucinations are present that the stimulant practice is applicable. The same treatment is indicated when the patient is threatened with convulsions; but if the face be flushed and more or less livid, the cold affusion, or the simple application of ice to the head, should be conjoined with the stimulants.

Various alcoholic preparations will answer the same end. Whiskey with quassia is by no means palatable, and at the same time suits well with many drunkards, but some of them are nauseated by it, and require brandy, gin, or the like. The dose is necessarily very various: on no account, and under no circumstances, is it either necessary or proper to give a sufficient quantity to render intoxication possible. Our object is the very reverse of this: it is simply to tranquillize the agitation of the nerves by small doses of a poison to which the patient has been accustomed, but not toxicological doses; and these small doses may seem large in some patients, although they are in reality small compared with their habitual allowance. For most purposes, one ounce of the above-mentioned stimulants may be given every three or four hours; in bad cases, two ounces may be given every two hours, for a few doses, and then in a less dose. In very few cases was this quantity exceeded; and then only for a very short period, when the life of

the patient appeared dependent upon the prompt revival of his sinking powers. If the patient be feeble the stimulant may be given in the form of milk-punch, or in arrow-root. The largest dose is generally required for a single day, afterwards it should be gradually lessened, and after a sound sleep, or as soon as there is a decided diminution of the tremors, all alcoholic remedies may be given up and supplied by a simple bitter infusion, or the assafoetida mixture. In some cases the cure takes place, as it were, abruptly, and the patient is at once restored to health; in others, after the cessation of violent symptoms, the patient may remain in a nervous state with some tremors, but no decided hallucinations: there is at the same time in many cases some indications of active excitement of the brain. This state of things is, however, much less frequent after the alcoholic than the opiate practice; but in either case, the best remedies are a smart purgative, exercise in the fresh air, and cold affusions on the head.

There are often complications which require some modifications of the treatment, but they are less frequent than in the opiate practice. The most common is gastritis; to a greater or less extent it may be said to be natural with drunkards, and ceases in a great degree as soon as the cause is removed; if it be not very intense, it requires no special treatment. This slight gastritis is often attended with vomiting, which ceases after an emetic, or the administration of the usual stimulants. If, however, the disease be severe, with red tongue, and great tenderness, and constant vomiting, all stimulants should for a time be suspended, or they may be given in small quantities and iced. Bladders, or cloths, containing ice, may be applied to the epigastrium, the proper diet for gastritis directed, and cups and leeches may be used if the former remedies prove insufficient. When the gastritis becomes very intense the symptoms of delirium tremens in general subside, and seem displaced by it; and the brain symptoms become then secondary to gastritis, such as fixed but muttering delirium. These are often confounded with those proper to delirium tremens. Congestion or inflammation of the brain may complicate, replace, or succeed to delirium tremens: when they appear as mere complications they may often be relieved by the means I have indicated without suspending the treatment proper to the disease. But if the vascular disturbance of the brain constitutes the disease, and the delirium tremens is either not developed or disappears, the treatment becomes that which is adapted to the particular cerebral state, and venesection is sometimes under these circumstances of immense value; but, as a general rule, local bleeding, revulsives, and refrigerant applications, are better means of restoring the balance of the system. These vascular affections of the brain are always produced in some individuals after a debauch, or even moderate indulgence; in a few they may occur upon taking a single glass of wine. Of course, in the latter case they are dependent upon a peculiar idiosyncrasy, in which a very small dose of an alcoholic stimulant acts as a virulent poison. If the vascular ex-

citement of the brain from a debauch be not attended with the symptoms of real delirium tremens, or if they be very slight, and be concealed as it were beneath those of excitement, then it is very clear that the case should not be treated as one of delirium tremens ; — an error of diagnosis in this respect would be mischievous.

In pointing out to you a mode of treatment which a long experience has shown to be safe and remarkably certain in its results, I am very far from excluding other means as injurious; on the contrary, many of them may be used in connection with the stimulant practice, or may be substituted for it, if you have strong objections to this mode of treatment. Should you prefer opium, I would warn you against giving it in very large doses, except you can observe the condition of your patient before administering each of them. By combining opium with tartar emetic or ipecacuanha, you may succeed in producing calm or sleep in smaller doses than if given alone. Although it was the remedy formerly relied upon in the hospital, I have not administered it for two years, except in rare cases for some intercurrent disease, such as dysentery. In some instances, as of fractures of limbs, &c., it may be necessary to use opium, but these are rare: there is another case in which it may be of service, that is, when the patient is tranquil, but still sleeps little; a moderate dose of opium is then at times of service.

In recommending to you a practice of this kind, I do so simply because I believe it to be a duty to inform you of the results of my experience in the treatment of this disorder. The great success of the treatment is a matter of demonstration; while there can be no possible objection to the practice, except the fear of giving something like a sanction to the assertions occasionally made by drunkards, that they cannot do without their stimulants. This, however, is clearly an error: the continued use of alcoholic liquors even as a remedy is always injurious and reprehensible; but this is very different from their employment during the two or three days of an attack of delirium tremens.

The examination of the records of the hospital do not show that the admissions for delirium tremens of the same individuals are at all influenced by the treatment in previous attacks, whatever that may have been; on the contrary, there is strong reason for believing that such is not the case. The thirst for alcoholic drinks, once acquired, can only be overcome by a moral action and a strong will on the part of the patient; hence, it is extremely rare to find a drunkard reformed from fear of illness or suffering. The will to abstain, for it requires an act of strong volition, must come from other reasons; and the influence of the societies which are now labouring in the reformation of the intemperate, is certainly enhanced by the support which they receive from mutual encouragement giving strength to the feeble will of the intemperate.

After a treatment, or after an attack without treatment, of delirium tremens, the patient should break up his old habits of association of time and place, take a journey, engage in some new and

active employment. Shower baths, or simple cold baths, with some light purgatives, are useful in dissipating the remains of the disease, and in favouring sleep when the disease is no longer in its most active stage, but is not entirely removed.

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## LECTURE X.

Dysentery. — Varieties. — Diagnosis. — Anatomical lesions. — Treatment.

DYSENTERY is a disease of unfrequent occurrence in the cold seasons of the year. It is most commonly met with in summer and fall, the liability of inflammation being transferred with the approach to winter, from the bowels to the lungs. I, however, present two cases of dysentery, one of the acute, the other of the sub-acute form.

The latter is that of a man aged sixty-five years; he has generally enjoyed good health: on his first admission into the hospital, he had intermittent fever, from which he recovered, and went about his usual employment. About a fortnight after this, (on the 1st of October,) he was again admitted, having been seized with dysentery two days before. It came on with frequent discharges from the bowels, which were watery, and passed with little pain. In a few days the character of the stools changed; they became yellowish, and were composed of thin faecal matter, mixed with mucus; but there was no blood. The patient has also suffered pains, but of no great severity, along the course of the colon, from the cœcum to the sigmoid flexure. He has not experienced nausea; his appetite has been tolerable; he has suffered little from thirst. The skin has been harsh and dry, with considerable emaciation, and a countenance indicative of griping pain in the bowels; the features which give to it this expression, are the frown on the brow and compression of the lips. The degree of emaciation has varied frequently with the intensity of the case; being on one day extreme, — the next much diminished. The pulse has been sometimes quick, sometimes slow; it now beats 96 in the minute. The skin is cool; there is, therefore, very little fever, nor has there been much at any time in the course of the disease. The tongue has been, throughout, dry, cracked, and red, as it almost always is in severe cases of *chronic* dysentery. This appearance of the tongue is not so frequent in *acute* dysentery, because the inflammation requires some time to extend itself up the alimentary canal. In chronic cases we often find this condition of the tongue attended with a disagreeable taste, and even ulcers in the mouth. The patient's tongue is now become natural; abdomen slightly tender, and not retracted.

The *acute* case is that of a woman, forty years of age. She was admitted on the 12th of November. During the summer, she had

an attack of dysentery, and has since been confined in the wards with rheumatism, but had recovered. Her present illness commenced on the 10th inst. The discharges were frequent and watery; on the 12th they contained mucus with some blood. She has had fever, but no chills; nausea, but no vomiting.

15th. The countenance is anxious; abdomen extremely tender and painful; stools passed every hour; they contain mucus, but no blood.

To-day (16th) the blood has reappeared in the stools. This disappearance and reappearance of blood in the stools are of frequent occurrence in acute dysentery. The history of the case shows that the stomach has remained nearly intact, the disease being confined to the large intestine.

*Present condition of the patient.*—The countenance is very slightly flushed, especially the lips; there is no compression of the lips, as in the former case; the countenance expresses nausea and disgust, rather than griping pain. The skin is moist and pleasant, but has been warm and more dry. The tongue is covered with a brownish fur, but moist; there is some pain on pressure all over the abdomen, but it is especially severe in the transverse colon and sigmoid flexure; pulse moderately strong, but compressible, and beats 110. The intellect is confused and weak, but this condition is habitual to this woman, and is not connected with the disease.

I now present a case of tubercular diarrhoea; a disease having a close analogy to dysentery. The disease has continued for two months, the patient having for some time previous been labouring under phthisis pulmonalis. Since the commencement of the diarrhoea the pain in the chest has continued, but the cough has declined, as almost always occurs in such cases. The diarrhoea seems to act uniformly as a revulsive, and stills the cough, or sometimes removes it for a time. The patient passes five or six stools daily; they consist of ordinary fecal matter, mixed with serum, but no mucus or blood.

The *diagnosis* of dysentery is, in general, easy in acute cases. The tormina and tenesmus, and peculiar stools are sufficient to distinguish it. But in the chronic form of the disease the diagnosis is more difficult, as it is apt to be confounded with that form of diarrhoea which is produced by a tubercular condition of the follicles of the small and large intestine, and is usually preceded by a similar condition of the lungs. We are to distinguish them by the history of the case. Tubercular diarrhoea is, in most cases, preceded by phthisis pulmonalis, that is, the disease generally begins in the lungs before it attacks the bowels. The discharges are generally irregular as to amount and frequency, and they differ in nature also from those of dysentery, as is proved by reference to the above cases.

*Anatomical lesions.*—Dysentery is an inflammation of the *large intestine*, as is sufficiently indicated by the position of the pain. This inflammation and its consequences in some cases extend a short distance into the *small intestine*, and even to the *stomach*;

but it always commences in the large intestine, and is generally confined to it. It mostly begins towards the lower end of the colon, and is sometimes restricted altogether to within a short distance from the anus. The inflammation produces ulceration in various degrees; thickening of the mucous, and other coats; contraction of the calibre of the intestine, from the spasm of the muscular fibres, or sloughing of the mucous membrane, which may thus be extensively detached. The mucous follicles suffer much from the disease, and the ulceration generally begins in them, and then assumes a regularly rounded form; then smaller ulcers run together, and finally give rise to the extensive destruction of the mucous coat which occurs in most bad cases of dysentery. The anatomical lesions of this disease are of importance for the prognosis; for when you have become familiar with them you may readily understand how slow the intestine is to recover its normal condition; indeed, it is apt to remain for a long time more or less diseased, notwithstanding the diminution of the symptoms. The contraction of the gut is one of the greatest obstacles to perfect cure when the ulceration has been extensive, for it can no longer bear the distention caused by the passage of fecal matter, and every new process of defecation is a new irritant to the denuded surface. It is, however, surprising to find that the intestine will sometimes, though rarely, regain a healthy state after the most extensive sloughing and ulceration. That is, it will regain very nearly a normal condition, but, perhaps, remain a little more irritable than usual. These remarks are applicable to the protracted cases of the disease, where the ulceration is deeply seated, and the powers of restoration have declined. When the disease is acute, the most extended ulcers will cicatrize kindly, and leave behind a smooth cicatrix, with puckered edges. These I have often seen months and years after an attack of acute dysentery, in patients who have died of diseases in no way connected with it. The depth of the ulcers is, therefore, more important than their extent.

But the inflammation of the colon is not all; there is something more; and you will rarely find that patients can be said to labour under a local disease if the dysentery be severe. But although in the simple state it is certainly little else than a mere colitis, the complications render it dangerous, chiefly because the blood and the cerebral system are involved. Still, the inflammation of the colon is, in all cases, the fixed anatomical character of the disease.

*Treatment of dysentery.* — In the acute form of the disease, the treatment is sufficiently simple. The usual antiphlogistic means are required, with local applications to the inflamed mucous membrane, calculated to allay its irritability and remove its morbid secretions: these local remedies are narcotics and laxatives. In the practice of this hospital, especially during the present year, we rarely find it necessary to bleed. We give first a dose of castor oil, and then make use of the oily mixture. Calomel, either alone, or combined with opium or ipecacuanha, is by far the best remedy in severe cases; we sometimes also use ipecacuanha alone, or

Dover's powder. In most cases mercurials are sufficient to effect a cure as soon as they produce ptyalism, or just before, when the symptoms of acute dysentery often cease at once. Half, or a quarter of a grain of calomel, every two hours, will salivate in three or four days. It is usually combined with opium, to allay the griping, and prevent purging; or the pulv. ipecac. et opii may be employed in place of the opium, to effect the same objects. I also frequently use ipecacuanha, either alone, or combined with opium or calomel. In the case of subacute dysentery before us, I have employed these remedies, at times resorting to the acetate of lead, and various astringents, without much advantage: Dover's powder has produced the most benefit. In the acute case you saw to-day, I gave half a grain of calomel, with three grains of Dover's powder, every two hours.

I rarely employ calomel as a *purgative* in this disease. I use it for a few days only, to produce its specific antiphlogistic effect, — that is, until slight ptyalism is induced. If it is not then attended with good effects, it should be given up: a continuance of its use will do much injury, and tend to increase the ulceration of the bowels.

This is a peculiarity in the action of mercurials; in many acute inflammatory diseases, the advantages to be gained are when the point of very slight ptyalism is reached, which is a test of the operation of the remedy, and the system may then be regarded as saturated. I am quite convinced that if, from any peculiarity of the system, or from the disease assuming an unusual tendency to the spreading of the ulcerations, mercury should be administered after ptyalism has been produced without benefit, the patient is decidedly injured. The remedy is best adapted to the inflammatory forms of the disorder, and, as we shall presently see, is least fitted for the sloughing or malignant variety.

Of the particular remedies in dysentery, purgatives have been extensively employed. We use many articles of this class in the hospital; the best is admitted to be castor oil, which purges sufficiently to carry off the vitiated secretions, without producing much irritation. To prevent the oil from acting too harshly, and to lessen the irritability of the bowels, laudanum may be advantageously combined with it. The oleaginous mixture is a good formula for their combination; of this we give half an ounce every two hours, till it begins to act on the bowels.\* Rhu-

\* In giving the oil mixture, it is important to select such a formula as will render it agreeable, or at least not disgusting to the stomach. The following is a good one: — R. Ol. ricini, 3*i.*; Tinct. card. comp., 3*i.*; Aq. cinnam., 3*iiiss.*; Gum aca. q. s. ad faciend mist. To the mixture we may add half a drachm, or forty minims, of laudanum — in a few cases even a larger quantity. The dose is a tablespoonful every two hours, or less frequently if the disease be declining. At the beginning of dysentery, when the stomach is quite healthy, it is better to give oil as a purgative, in doses of half an ounce, repeated once or twice, with ten to twenty drops of laudanum. At the end of the disease the bowels sometimes act irregularly, and the oil is then useful in very small doses, that is, a teaspoonful.

barb will also answer well as a purgative, and when the active symptoms have declined, the spiced syrup answers better than any other remedy. Venesection is sometimes required in acute dysentery, when the pulse is strong and cored; but we have not found it necessary in any case which has occurred in this hospital during the present year. The epidemic character of the disease has not been of the violent inflammatory character, which is a cardinal point in the diseases of the mucous surfaces, and seems necessary to the perfect cessation of the disease. I would not have you to misunderstand me, the term restoration of the secretions has been much abused and used vaguely. It means simply, in this case, to bring about the natural secretions of mucus, &c., in place of the diseased ones of blood and lymph. A certain set of remedies tend directly to produce this effect, and by restoring the natural secretions, they not only prove that the disease is ceasing, but they contribute to its cessation by producing depletion in the most effectual way, that is, through the natural emunctories of the part. Cups and leeches to the abdomen, along the course of the colon, are also frequently advisable; the latter may also be applied around the anus, for the purpose of drawing blood from the hemorrhoidal vessels, and relieving the tenesmus. Warm fomentations are very often beneficially employed. But these measures, however important, cannot alone be relied on for the cure of the disease; we must restore the secretions to their healthy condition. This is a principal, though not the only object for which we employ calomel, with opiates, &c. The action of opium in dysentery is peculiar; in the first place, it allays the local pain and general irritability; and secondly, it quiets the spasmotic movements of the intestine, and thereby facilitates the process of cicatrization. But it may likewise produce bad effects; it tends to lock up the bowels, and prevent the discharge of the morbid secretions. To obviate this disadvantage we seldom use it alone, but combine it with castor oil, calomel, or ipecac. It may sometimes, however, be employed singly, either at the commencement or towards the close of the disease; but never during the height of the inflammation. Opium is also used by *injection*. In this city, opiate injections in dysentery have not been much employed till within the last few years; and in the country their use is still very limited, but in this hospital we are in the habit of using them very largely. From twenty to forty drops of laudanum may be administered in this way, but not more, for dangerous consequences from time to time result from the frequent employment of large quantities of so powerful a narcotic, particularly when given by the rectum, in which mode of administration its action upon the brain is more irregular than when given in any other way. We usually inject twenty drops of laudanum mixed with a small portion of mucilage, every, two, three or four hours, according to the severity of the tenesmus and the effects of the remedy; thus, if the stools cease, or if the mind becomes confused, dull, or the patient sleepy, its use should be

suspended. There is still another way in which opium may be employed in dysentery; that is, by means of poultices sprinkled with laudanum, and applied to the abdomen, or to the anus.\*

Of the other remedies employed in dysentery, ipecacuanha, as we have already mentioned, is among the most useful. It is used either singly or combined with calomel or opium. A very effectual method of administering it, is in combination with extract of gentian and blue mass. This combination originated with Mr. Twining, and has been extensively and beneficially employed in India. It generally produces vomiting at first, but in a short time this effect ceases. I tried it largely in one epidemic; its administration was followed by nausea and diaphoresis, and a considerable alleviation of the symptoms. It sometimes failed, but was generally successful. The proportions are, six grains of ipecacuanha, four of blue mass, and five of the extract of gentian.

Various other remedies have been employed in acute dysentery. They are principally antiphlogistics, such as saline purgatives, calomel in large doses, &c. These will doubtless answer in many of the ordinary cases of the disease.

*Malignant* dysentery is a form of the disease requiring considerable modification in the treatment. It occurs for the most part in hospitals, ship, camps, &c. We had an epidemic of it in Philadelphia in 1837, and some cases in 1838; it was so violent and rapid in its progress as sometimes to produce gangrene of the intestines in two days. It is attended with great prostration of the vital powers; subsultus tendinum, and various other signs of debility and nervous disorder. All modes of treatment will frequently fail in this form of the disease. In the epidemic of 1837, we found it necessary to resort to stimuli, tonics and astringents; as wine or brandy, cinchona or cascarrilla, with the early use of kino, catechu, or chalk. Opium was also employed as a stimulus.

Another variety is the *subacute*, of which we have an example in the first case above detailed. It occurs mostly in persons above the age of forty; and often appears to be the effect of irregular habits, or of the gradual decline of the powers of life. In these cases, besides a regulated diet, we find Dover's powder to be the most effectual remedy; it succeeds better than mercurials alone, but it may be combined with them, especially the hydrargyrum cum creta, which is one of the mildest and best. I generally give it in three-grain doses every four or six hours. Cases of sub-acute dysentery are unfrequent in summer, being most commonly met with in the fall. We have had many cases of it in this hospital; they have been principally confined to the lunatic wards — a circumstance which is explained by the debilitating effect which a disordered mind has upon the system.

Besides the remedies already spoken of, the *acids* have been largely

\* This is very useful when the anus and rectum are too irritable to bear the mechanical action of an injection.

used in the treatment of dysentery. This practice originated in tropical climates, where lime-juice, vinegar, and other vegetable acids were employed. The use of the mineral acids was mainly introduced by Dr. Hope, whose mixture of nitrous acid, camphor and laudanum, has been of late years so extensively used in bowel diseases. It often produces the best effects, but will not answer in the sloughing form of the disease. It proves most effectual in the sub-acute variety, and sometimes in the acute, after the severity of the case has declined; but in the ordinary cases of acute dysentery, the benefit produced by this mixture is very problematical. The dose is about half an ounce every two or three hours.

The acid practice is founded upon a peculiar change in the symptoms of the disease which occurs in dysentery. The stool and saliva become extremely alkaline, and even the urine and perspiration lose to a certain extent or altogether their excess of acid. In giving the mixture I have usually continued its administration until the excessive alkalinity of the secretions diminished or altogether ceased.

*Chronic dysentery* is another form which we frequently meet with. We have a case of it at present in a woman who has been suffering with it for six or seven weeks. There was griping in the region of the transverse colon, but during the last week it has been slight; there have been three discharges in the last ten or twelve hours; the skin is dry and harsh; the patient is much emaciated; this form of the affection, indeed, produces more emaciation than any other disease except cancer. Chronic dysentery may last for years, and produce extensive ulceration or sloughing; and when even checked, is very liable to return.

*Treatment of Chronic Dysentery.*—We must rely principally upon a regulated *diet*, of such a nature as will best agree with the patient; for most persons farinaceous articles answer best, while others require animal food. Of the remedies to be employed, the best are opium and ipecacuanha with calomel, in minute doses. The nitrate of silver is often useful. In many cases, travelling by land or sea, particularly the latter, has operated very beneficially, by producing a general alteration and improvement in the system. This has been found to be particularly the case in the dysentery of the East Indies. Sea bathing or sulphur baths are also of great benefit.

From the preceding remarks you will understand that our treatment of dysentery must vary exceedingly in the different forms of the disease. The success of the treatment will, therefore, be various in different epidemics. In the malignant, sloughing dysentery which occurs in camps, &c., the mortality is generally great, while, in some epidemics, it is comparatively trifling; we should not form a general opinion of the character of the disease from observation of a single epidemic, and still less, can we estimate the success of our treatment, unless it has been tested in various epidemics and in different years. A multitude of remedies are often prescribed and used with great benefit in the treatment of the disease; the limits of this lecture will prevent me from even mentioning the greater

part of them, but they will be in general suggested by the peculiar symptoms of each case, and you will often succeed, in the most obstinate cases, by attending to some apparently unimportant particulars, such as the condition of the skin, or some slight change in the diet or mode of life of the patient.

In laying so much stress upon mercurials, I do not wish you to understand that I am in the habit of administering these remedies carelessly, or with unnecessary frequency. On the contrary, I would not use them in dysentery when mild purgatives will cure the disease readily; it is only in severe cases that I prefer the mercurial treatment, which is unquestionably the most effectual and most rapid means of getting rid of the disorder. There is no necessity for producing decided ptyalism; a slight action upon the gums is sufficient to test the effects of the remedy.

I have explained to you the anatomical lesions at length, because your prognosis is, in severe cases, to a great degree, founded upon their extent, and you will perceive that a complete cure can only take place when the ulcerations of the intestine are healed.

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## LECTURE XI.

Sub-acute dysentery (continued) — Pathology and treatment. — Phthisis pulmonalis.

I SHALL bring forward to-day a case of the sub-acute form of dysentery, and afterwards several cases of phthisis, for the purpose of illustrating some of the various modes in which this disease commences.

The case of dysentery is one of a class not unfrequently met with during the winter months, in which not only the bowels, but the mucous membranes generally, are affected. The patient is a man of nearly fifty years of age, and an habitual drunkard. A fortnight since he had an attack of *delirium tremens*, the symptoms of which continued during several days after his admission into the hospital. After an exposure to cold recently, he was seized with bronchitis, and the affection of the bowels for which he is at present under treatment. The alvine discharges have been very frequent, sometimes several in the course of an hour; the pain was constant, but much more moderate than it usually is in the more acute variety of the disease. The character of the stools equally shows that it is not a case of acute dysentery; they consist of ordinary thin, fecal matter, mixed with mucus, but at no time has either *lymph* or *blood* been present. This case is a very good exemplification of the nature of the discharges in sub-acute dysentery, and the changes which occur in them at different periods of the disease. At first they are either sero-mucous, or thin and fecu-

lent: subsequently their consistence and appearance become altered, and they present the characters observed at the present stage of the case before us. Blood and lymph are very seldom to be found; but in place of them, there is sometimes a grumous, fetid matter, resembling the scrapings of a disorganised intestine, which evidently results from partial sloughing of the bowel.

Although the stools differ so strikingly from those of the acute form of the disease, sub-acute dysentery is still an inflammatory affection; but the degree of action is moderate, on account either of the debilitated condition of patients labouring under it, from old age, or irregular habits, or of the epidemic constitution of the season. A constitution of this sort, indeed, appears to prevail at present, imparting to epidemic diseases a tendency to assume more or less of the characters of the case which we are considering.

The principal features of the case are as follows. (Complete notes were not preserved.)

J. G., admitted November 25th. The bowels are loose; there is cough, with whitish expectoration; patient much debilitated. The oleaginous mixture was administered, and a small quantity of milk-punch was allowed.

26th. The punch discontinued.

28th. Dysenteric symptoms more severe; twelve discharges from the bowels in the course of five hours; stools thin and watery, with very little feculent matter, but very fetid; slight pain on pressure over the abdomen; cough continues; mind confused and agitated. Six ounces of blood taken by cups placed over the colon, and the following combination prescribed:

R Pulv. Ipecac. et Opii, gr. v.j.  
Hydrarg. Submuriat. gr. j.  
Ext. Krameriae, gr. v. M.

To be repeated every three hours. Blisters also applied to the abdomen.

29th. The Dover's powder and rhatany in the above prescription were diminished to three grains each, and the calomel to one-eighth of a grain. It was found necessary to reduce the Dover's powder, because it produced some symptoms of narcotism; that is, contraction of the pupil, and confusion of mind, without diminishing the frequency of the stools. When such a state of things occurs, you must either discontinue opiates, or reduce the quantity administered; else the narcotic may accumulate in the system, and cause the patient to sink suddenly and almost imperceptibly. In the earlier stages of acute dysentery, opium may often be given very largely without producing its characteristic effect. A case of this variety occurred a few years since in one of the resident physicians of this hospital. He was attended by Dr. Horner and myself, and the quantity of opium was gradually increased to thirty grains a day before the least effect was produced. But in the sub-acute form we cannot employ such

large quantities with safety, and the remedy should be withheld, or its dose diminished, as soon as it produces its specific effects. You must recollect, too, that even in the acute form of the disease, you must give it very cautiously ; for mischief may in any case result from it, if administered in a careless or rash manner. The rule is, to increase it gradually, and watch carefully its effects ; suspend it altogether, or diminish it greatly, the moment you find any signs of narcotism.

The Dover's powder and calomel have been the active remedies used in the treatment of this case ; the extract of rhatany has been productive of no very decided benefit. The good effects of mercury in this disease, (as remarked in a previous lecture,) coincide with the occurrence of slight ptyalism, — which I find, upon examination, to have taken place in the patient before us. If it procures no amelioration of the symptoms at this characteristic period of its operation, mercury should be discontinued ; and in all cases where there is sloughing of the mucous membrane, and a gangrenous fetor of the discharges, its use should be avoided, as it then undoubtedly tends to aggravate the severity of the disease.

You must have remarked that stimuli were employed in the early treatment of this case. The patient came in much debilitated from the effects of delirium tremens and previous dissipation, and a small quantity of milk-punch was therefore allowed. In all cases of this disease, indeed, in which there is an enfeebled condition of the vital energies, it is necessary to use stimuli. This is particularly true of the malignant or sloughing variety of dysentery, between which and the sub-acute there is an intimate connection. The latter has a constant tendency to pass into the former ; and from what has so frequently occurred in camps and hospitals, I have no doubt that the present case would assume the malignant form, if there were many of a similar character in the wards at the same time. If such a change should supervene, it would be necessary, as I have already remarked, to discontinue the use of mercurials, and to rely principally upon Dover's powder and stimuli.

The cupping in this case produced only moderate benefit, whereas the blister operated very advantageously. It is one of those instances of moderate, but obstinate inflammatory action, to which blisters are so peculiarly adapted. Cupping or leeching would be better in the more violent and acute cases of dysentery.

The woman who was brought before you two weeks since as a case of acute dysentery, and was treated with mercurials, is now quite well. The man who was labouring under the sub-acute form of the disease, at first improved considerably, by the use of Dover's powder and astringents, but afterwards sank again, and died on the 28th inst. The results of the post mortem examination are as follows, and show the cause of death.

I now present to you the lesions met with in the intestinal canal.

The mucous coat of the rectum is of a bluish colour, and softened. As we pass up the colon, we find extensive ulcerations, some of which are cicatrized. There is a large cicatrix near the sigmoid flexure; the newly formed membrane is thin and bluish; the old membrane, on the contrary, is much thickened, and to a still greater degree are the cellular and muscular coats. Farther up the ulcers are scattered about, of small size; the mucous membrane softened. Near the cœcum the morbid changes are of more recent date; the mucous membrane is highly injected, and patches of lymph are here and there observed. The ulcers are in the acute stage of their progress; they are of a rounded form, and are seen to have commenced in the follicles of the intestine. We have here exemplified the different appearances in the acute and chronic forms of dysentery; in the upper part of the colon, where the former condition prevailed, the mucous membrane is of a bright red colour, as in acute inflammation of this tissue generally; but in the lower part, where the disease had become chronic, the colon is bluish. This examination also illustrates a remark which I made in a former lecture, that dysentery usually commences in the lower portion of the colon, and proceeds upwards in its course.

The disease has also passed into the ileum, which is in a state of acute inflammation. There are bright red spots and patches of lymph, scattered over the mucous membrane, for some distance from the ileo-cœcal valve. The glands of Peyer are altogether or nearly intact; in which circumstance you perceive a striking difference from the inflammation of the ilium which occurs in typhoid fever. This acute inflammation of the small intestine, supervening in the course of the dysentery, was the immediate cause of death. The mucous membrane becomes gradually more healthy as we ascend, but is more or less softened.

The stomach also presents marks of inflammation. At the splenic extremity the coats are very thin, and much softened; this condition was in a great measure produced by the action of the gastric juice, which had become altered in constitution, and excessively acid; the membranes at this point have an acid smell, and produce an unusually powerful reaction upon test paper. Throughout the remaining portions of this viscus the coats are white and opaque, from an alteration both in the fluids and the structure. There are dark red patches in several places. Near the pylorus there is a puckering of the mucous membrane, produced by a cicatrix. This membrane is generally softened, but the colour is not particularly reddened. The coats of the pylorus are thickened and indurated, and there is a scirrhus formation in the cellular tissue; its fibrous character is, however, not yet distinctly marked. The symptoms produced by scirrhus of the pylorus, are difficulty of digestion, and vomiting from time to time, which may be so severe and repeated as to produce death. It may be remarked that these scirrhus affections are frequently developed in constitutions where the diathesis has been latent, by depression of mind, particu-

larly in old persons. This is illustrated by the instance of Napoleon; and I recollect an equally striking case occurring in a Swiss emigrant.

The liver is also affected in the present case, but lesions of this organ accompany dysentery far more frequently in hot than in cold and temperate climates. Its colour is a pale yellow, and it appears to be in the first stage of that alteration called the *fatty degeneracy*. The tests of this condition are the greasy appearance of the scalpel when drawn through the substance of the liver, and the bright flame produced by burning a piece of paper which has been moistened with the fatty fluid. The acini are also observed to be very distinct, and surrounded by vessels, producing an appearance of great vascularity and incipient inflammation of the liver. The fatty degeneracy in this case was probably produced by the habitual intemperance of the patient, and subsequently increased by the dysentery.

The spleen, which is so often found greatly enlarged and softened in various diseases, is here nearly of the natural size, but the texture is softened. The cause of this change in the spleen is not well understood, but it appears to be in some way connected with an alteration of the blood. The spleen probably performs an important part in the formation of this fluid; but what the precise office is, cannot be yet ascertained.

From this examination you will perceive how readily the most extensive ulcerations of the mucous membrane of the intestine will cicatrize, provided the muscular coat is not exposed by them.

#### PHTHISIS PULMONALIS.

I next proceed to bring to your notice several cases of phthisis pulmonalis, with the view of exemplifying some of its modes of origin;—this is the more appropriate, as the present season (November) gives rise to few acute diseases.

*Case 1st.*—You may recollect that this man came before you on the 23d inst., with many symptoms resembling those of intermittent fever. Since that time the skin has continued hot, with occasional sweats; the pulse has usually beaten one hundred and sixteen in the minute; yesterday, ninety-six; it is also quick and irritable, jerking, and easily felt, but small and not cored. This character of the pulse is often important as a diagnostic sign; it occurs in chronic diseases, or in acute diseases gradually passing into a chronic state, accompanied by a general disorder of the system. It is most frequently observed in incipient phthisis, particularly when this disease is attended by pleurisy. The respiration is also, much more hurried than natural, being performed from thirty to thirty-six times a minute. Cough frequent; expectoration thin, white, and small in quantity; tongue at present somewhat pale, and gradually cleaning. The respiration is resuming its natural character in the lower part of the right lung, owing to

the decline of the pleurisy; but it remains rude in the upper lobe of the lung; a sign corresponding to the tuberculous condition of the part. The action of the heart continues exaggerated, and the second sound is still absent. The difficulty of walking also continues, but in a somewhat less degree; it is dependent on an acute affection of the spine.

The treatment of this case has consisted in the application of a blister to the cardiac region, and the administration of digitalis and Dover's powder, in the proportion of one-third of a grain of the former to three grains of the latter, the dose being repeated four times a day. Considerable advantage has resulted from these measures; the inflammation which had existed being in a great measure overcome, and the inordinate action of the heart diminished. The digitalis and Dover's powder were given particularly with a view to the latter effect, and to allay the irritability of the pulse. This combination sometimes produces a dryness of the mouth, and of the alimentary canal generally, which is unsavourable to the due performance of the digestive functions: but it is by far the best mode of administering these remedies.

I have introduced this case as an example of tubercular disease commencing with pleurisy. The tubercular deposition seems to be a result of the inflammation, as truly as are its ordinary consequences, effusion, adhesion, &c. In most patients the latter conditions would be the only effects of the inflammation; but in the present case there existed a cachectic condition of the system, predisposing it to the development of phthisis; hence this disease followed as a consequence of the inflammation. The inflammation which thus produces phthisis, may be seated in any of the tissues of the lungs: thus, it may be a bronchitis or a pneumonia, as well as a pleurisy. But it usually affects a *serous* membrane; therefore, pleurisy is more frequent than the other pulmonary inflammations preceding phthisis, just as peritonitis also is often the primary lesion in tuberculous deposits in the peritoneum. But these cases of inflammatory phthisis are by no means so frequent as those which commence gradually and slowly. Of this more common form we have an example in the next case.

*Case 2d.*—The patient, who is a printer, has for a long time had a slight cough, and other symptoms of incipient phthisis. During the last summer, there was a great aggravation of all the symptoms, accompanied by a slight inflammation of the bronchial tubes; and the patient is now scarcely able to leave his bed. In this case, it is evident that the inflammation was the consequence, not the cause of the phthisis, as in the preceding case. With regard to those cases of phthisis which I suppose to be caused by inflammation; it may be argued by those opposed to this view of the origin of the disease, that the phthisis *existed*, but in a *latent* form, previously to the commencement of the inflammation. But those cases are exceedingly rare, in which the disease does not declare itself, either by some symptoms, or by physical signs.

Hence, I feel compelled to believe, in contradiction to my former opinion, that phthisis may arise from inflammation, occurring in constitutions predisposed to the formation of tubercles.

*Case 3d.*—This woman has had a slight cough for four years; about three months since, after exposure to wet and cold, the cough and other symptoms were greatly aggravated. These circumstances are sufficient to show that, in this case also, the inflammatory symptoms supervened in the course of the phthisis, instead of preceding it.

*Case 4th.*—This woman also has had a cough of four years' standing, which became very bad during the summer; after working in an exposed situation. During the last week there have been flying pains under the ribs of the right side. These pains arise from the slight and shifting pleurisy so often met with in cases of tubercular disease. These pleurisies are generally dry; that is, unattended by effusion of serum. The expectoration is copious; the sputa are in round masses, and of the kind called, from this circumstance, nummular; they usually sink in water, but sometimes float from their containing particles of air; they consist of pus, mixed with mucus, and sometimes a portion of broken-down tubercular matter.

In both these women, the skin has assumed a dusky, earthy colour, entirely distinct from the paleness which accompanies it; this hue is almost peculiar to phthisis. The sclerotica has that light blue tinge which is so frequently met with in constitutional cases of phthisis. The appetite has remained good; indeed a good appetite, persisting for a long time in a patient affected with cough, and gradually becoming thin and pale, is one of the most constant indications of commencing phthisis pulmonalis; in many cases the appetite is morbidly great. One of the patients is *jaundiced*. This probably arises from a fatty degeneracy of the liver, accompanied by enlargement; a condition very frequently occurring in this disease; more particularly in female patients. The jaundice arising from this cause must be carefully distinguished by the practitioner from that which depends upon primary affections of the liver, and is totally unconnected with any disease of the lungs. I have seen many cases of phthisis in which the liver was supposed to be the sole cause of the mischief. It is true, that in a large proportion of these patients the liver was fatty, but this condition arises from the phthisis, and is neither a primary lesion, nor one in itself of much importance.

*Case 5th.*—This man has been very recently admitted into the hospital. He is much emaciated, and has had a cough for four weeks; the disease is therefore probably phthisis. This probability is rendered almost certain by the respiration being very deficient under one clavicle, and feeble under the other also. But there are as yet no signs of the existence of a cavity. The patient's account of the manner in which the disease commenced, is this: After having been engaged at hard labour, out of doors, during the day, he was awoken from sleep in the night by a sudden fit of coughing

and hemoptysis; in a short time he discharged in this way a pint of blood. The hemoptysis lasted several days; but for the last three weeks the sputa have contained no blood, but only a frothy matter. This is an example of the *hemorrhagic* variety of phthisis. The hemorrhage with which the disease commenced arose from the mucous membrane of the bronchial tubes. In such cases the hardening of the pulmonary tissue, from the deposition of tubercular matter, does not generally commence early in the progress of the disease; or rather, it does not soon proceed to a high degree of induration in any particular portion of the lung.

The patient is a shoemaker: and we may remark that shoemakers and printers are particularly subject to phthisis, from the confined and sedentary nature of their occupations. His constitution has always been delicate; but he has never before had cough or pain in the chest, except after occasional exposure to cold. Immediately previous to the present attack, he was in the enjoyment of his usual degree of health.

*Case 6th.* — The patient is, like the last, a shoemaker by trade, aged 42. He has had cough for nearly two years, but it has been generally unattended with pain; there has been merely a sense of oppression at the lower end of the sternum. In February, 1838, he had an attack of pleurisy, which left behind it the usual signs of contraction of the chest. He had no cough previously to the attack of pleurisy, except for a short time, about six months before, and occasionally during spells of intermittent fever. The case, therefore, appears to be one of the inflammatory variety of phthisis, having been preceded, as in the first of these cases, by inflammation of the pleura.

*Case 7th.* — This is another example of phthisis commencing suddenly, with an attack of inflammation. The patient, a man 41 years of age, has had cough for eighteen months; it began after he had been working at the engines at a fire; had previously been a stout, healthy man, and had never had a cough of any duration. The attack was one of considerable severity, but the patient was not confined to bed by it; he did light work for a year afterwards, but for the last six months has been unable to perform any kind of labour. He is much emaciated, and presents all the signs of confirmed phthisis.

The cases of phthisis arising from inflammation are much more frequently found in men accustomed to hard labour than in others, and especially in those past the age of five and thirty. In younger persons, especially females, the disease is more frequent, and more commonly begins in a slow and insidious manner; inflammation may, and often does occur in these cases, but then it is strictly secondary, and depends either upon the irritation of tubercles in the lungs, or the accompanying fever.

There are cases in which phthisis becomes a local disease only at a very late period, remaining for a long time constitutional, and

apparently dependent, partly on the nervous, but, in a greater degree, on the vascular capillary system.

*Case 8th.*—There are three modes in which phthisis commonly commences: first, slowly and gradually, indeed almost imperceptibly; secondly, preceded by inflammation; thirdly, commencing with a sudden attack of hemoptysis. This case is an instance of the third variety of the disease—the *hemorrhagic*. The patient entered last Saturday; he is a weaver by trade. This employment is a frequent predisposing cause of phthisis, from the circumstances in which weavers are placed. They work in close rooms, much the same way as shoemakers and printers, and fatigue excessively the thorax. There are other circumstances which aid in producing this predisposition in weavers; such as long confinement in one position, the dampness of the cellars in which they generally work, and the breathing of an atmosphere loaded with irritating effluvia, which arise from the woollen and cotton goods. The patient had been in good health previously to the present attack; had never had a severe cough for any length of time, and had been temperate in his habits. His parents are still alive and healthy, so that the predisposition is probably not a hereditary one; though instances are occasionally met with in which consumption passes by one generation, and is transmitted from grandfather to grandson, without any indications of its presence at the intermediate point. The account given by the patient of the manner in which he was attacked, is this:—In February last, while engaged at work, he was suddenly seized with spitting of blood; in the course of a fortnight he discharged in this way a very large quantity of blood; he thinks it amounted to six quarts,—but this estimate is, no doubt, much exaggerated. At last he coughed up a large coagulum of blood, by which he was nearly suffocated. From this time the hemoptysis ceased, but the cough continued without intermission; the sputa are whitish and muco-purulent. About five months since, he began to be weak and emaciated, and has become more and more so ever since. Chills also commenced with the cough, and have constantly accompanied it up to the present time. This is, therefore, another of those cases of phthisis which simulate intermittent or remittent fever at their commencement, and of which I have already spoken in the two preceding lectures. The *tubercular fever*, causing this resemblance, occurs in the earlier stages of phthisis, and is truly an irritative disease. Sometimes it assumes the remittent type. I have known two cases of this sort amongst my own acquaintances, which were mistaken for remittent fever, and treated as such; but, after some time, the true nature of the affection was explained, by the clear development of the local signs of phthisis. In the present case there would have been little difficulty in the diagnosis, for the hemorrhage would have made the character of the fever clear. But, in the majority of cases where hemoptysis does not precede the tuberculous disease, you will be often aided greatly in your diagnosis by the characters of the fever.

The patient has also suffered from profuse night sweats, and here we have a circumstance which distinguishes this fever from hectic. In the latter, the sweating is not so profuse as in the former; but the chills, on the contrary, are more severe. The patient's appetite has been bad for four or five months; he has had several attacks of diarrhoea, continuing two or three days at a time. Diarrhoea is a common attendant of phthisis pulmonalis, and generally arises from the deposit of tuberculous matter in the small intestines simultaneously with the same process in the lungs; but the frequency and duration of its attacks vary greatly in different cases. You have remarked that the patient was seized with hemoptysis while at work; it is in this way that it often begins,—suddenly, and while the chest is exposed to some strain.

Hemorrhage from the lungs, occurring in this sudden manner, is, in most cases, a sure sign of phthisis pulmonalis. It may sometimes arise from other causes, as disease of the heart, congestion of the lungs, or a mechanical cause, such as a strain; but in five cases out of six, in men at least, it is followed by the local signs of tubercular disease. In women, however, it is not so valuable as a diagnostic sign; for in them it may follow suppression of the menses, and may, in fact, become a vicarious discharge. Though hemoptysis may arise, as I have said, from a sudden muscular effort, when there are no tubercles in the lungs,—yet, in the majority of such instances, they either exist already, or there is a tendency to their formation; for whenever such a tendency exists, the bronchial mucous membrane will bleed from very slight causes. I recollect an instance in which the hemoptysis was caused by jumping over a wall about five feet in height, and was followed by all the signs of phthisis; and another in which it occurred from lifting a gate which had fallen. The tubercular diathesis, therefore, predisposes to hemorrhage from the lungs. It is true, that not a few cases of hemoptysis abort, as it were, before the tubercles are secreted to any amount; but when we find that the majority of patients in whom this symptom occurs, are afterwards affected with confirmed phthisis, it is perfectly consistent with the facts to believe that the hemorrhage coincides with a condition of lungs which favours the tuberculous secretion, and which had in many cases given rise to a limited deposit of tubercles before the discharge of blood took place.

Of the tubercular fever, which is an attendant of the disease in the present case, I have spoken more fully in the preceding lectures. The other general symptoms present nothing peculiar. The emaciation, you perceive, is considerable, and is accompanied by that dirty, earthy hue of the skin, (more especially of the face,) which you have seen in several other patients.

The local signs are—1, cough; 2, expectoration: this at first consisted of mucus, afterwards becoming muco-purulent, with portions of broken down tubercles; 3, dulness on percussion under one of the clavicles, with mucous rhonchi, and a commencing cavernous

respiration. These last signs indicate the stage of the disease ; they show that there is already some softening of the tubercular matter. This fact is also proved by the character of the sputa.

*Case 9th.*—This patient has been a labourer on the canal. Before the present illness he never had a cough, or any other sign of pulmonary disease. He has been sick for two years: the attack was gradual, and was produced by taking cold. Since that time there has been constant cough and expectoration ; the matter of the sputa is at this time muco-purulent, and somewhat nummular, and begins to be characteristic of this disease. Emaciation has been apparent for eight months : before this attack, the patient was a stout man. The skin is dry, pale, and dusky. There has been one attack of diarrhoea. There was fever, with profuse night sweats, but no chills : it is therefore a modified form of hectic. At present there is not much fever — pulse 94. The expectoration consists of round masses floating in a thinner liquid, with small pieces of tubercular matter : at first it was mucous, then muco-purulent. The sputa takes its shape from the cavities in which it is found. We shall presently see that when these cavities are very large, the *nummular* character is no longer present. There has been no hemoptysis until two nights since, when about a spoonful of blood was discharged. Such small quantities are not important ; they may arise from irritation of the bronchial membrane, and it is only when hemoptysis is considerable, that it becomes a sign of importance, and also pathognomonic of phthisis.

*Case 10th.*—This patient was brought before you at the last lecture, as an example of tuberculous disease, coinciding with inflammation of the serous membranes. Since that time, the breathing has continued much oppressed ; tongue dry and red ; pulse, 95 to 104 ; bowels constipated. The vesicular murmur has become more distinct on both sides of the chest. There has been an increasing pain in the praecordial regions, with a *bruit de soufflet* of the heart ; respiration frequent and high. Yesterday, for the first time, I discovered a grating or creaking sound of the heart, indicative of pericarditis ; the *creaking* being produced by lymph into the pericardium. The two surfaces of this membrane rub against each other, chiefly at the beginning of the diastole of the heart, and a grating sound is produced by the spiral movement of the heart on its axis, during the dilatation of the ventricles. The patient, you will recollect, was first attacked by pleurisy ; since then, pericarditis has supervened, with more or less endocarditis. This case is, therefore, a good illustration of a circumstance to which I called your attention when I first brought it before you ; the connection between phthisis and inflammation of serous membranes. This patient has inflammation of all the serous membranes of the chest, occurring in succession. The pleurisy has declined as the pericarditis supervened. Besides the signs already mentioned, the existence of pericarditis, attended with effusion, is indicated by feebleness of the impulse of the heart, flatness on percussion, (extending over a larger

space than that occupied by the natural dulness of the heart,) and pain on pressure or percussion. The latter symptom, however, is not always present in pericarditis; in any of the serous membranes, in fact, inflammation may occur without any of the ordinary signs. But in this patient the flatness extends to at least double the usual spaces, and there is very decided pain at the region of the heart, which is increased by slight pressure, but is always more or less felt. The dyspnoea in this case is dependent partly on the pleurisy, partly on the pericarditis. The pulse is not invariably altered in inflammation of the heart, or its membranes; it is principally affected in endocarditis, which gives rise to more or less obstruction of the valves. In the present case, there is excitement of the pulse, and slight irregularity.

I shall now show you some cases of gangrene of the lungs, and bronchitis, the symptoms of which more or less resemble those of phthisis, and the diagnosis becomes, therefore, frequently difficult.

Gangrene of the lungs is by no means a frequent disease, it is oftener met with in hospitals than in private practice. It resembles phthisis, inasmuch as it produces softening of the pulmonary tissue, and, consequently, the formation of cavities. It differs from it in the fetor of the breath, and expectoration. The local signs, at the commencement of the disease, are imperfect.

The causes of gangrene of the lungs are cold, an epidemic tendency of the atmosphere, intemperance, and depressing circumstances generally. In most cases, it arises from direct exposure, but sometimes it comes on gradually, and appears to be part of a general disease; that is, it depends on a vitiation of the fluids, in the same way with dry gangrene, of which I have shown you an example.

*Case.*—The patient is a boatman, forty years of age. He had enjoyed good health till about two months before his entrance into the hospital. At that time, being engaged at his occupation on the Schuylkill, he fell into the river, and was with difficulty saved from drowning. He felt extremely cold, and could not speak for twenty minutes, but no sign of active disease followed for two weeks, other than feebleness and chilliness. Then a cough began, accompanied by pain in the lower part of the right axillary region; the sputa have never contained blood, and have been fetid from the beginning; appetite has been bad throughout; the patient continued to work regularly until November 30th; but since that time he has been unable to perform any kind of labour. The treatment, previously to his entrance into the hospital, consisted of venesection, and the application of a blister to the right side of the chest.

The patient was admitted December 6th. At that time the symptoms were as follows: slight emaciation; a dusky hue of the skin; slight flushing of the face; dilatation of the nostrils; skin warm; pulse 104, thrilling, moderately resisting; respiration 22, high and laboured; expectoration thick and homogeneous, of a dirty, grayish colour, and very fetid. On the right side, anteriorly, respiration vesicular throughout, with traces of the mucous râle, hurried

and harsh at the summit of the lung. On the left side, vesicular, with traces of both mucous and sonorous rhonchi. *Posteriorly*, on the right side, vesicular in upper lobe, hurried, and very feeble; in lower lobe, scarcely any vesicular sound; at the upper part, deep-seated, cavernous respiration, and imperfect pectoriloquy. Percussion gives a flat sound in the lower two-thirds of right side posteriorly; clear anteriorly. The signs, therefore, indicated a cavity in the lower lobe of the right lung, with an engorged condition of the surrounding tissue, accompanied by pleurisy. The treatment consisted in the use of chloride of soda, given in doses of twenty drops four times a day, with nourishing diet. Quinine, porter, and brandy are often necessary; the indications being to correct the fetor of the breath and expectoration, and support the system, while nature effects the elimination of the gangrenous tissue. A number of palliatives, such as opiates at night, will doubtless occur to you; but you should be sparing of depletory measures; they are rarely necessary, except when there is severe pleuritis near the gangrene; and these should be limited to local bleeding, or, still better, to blisters.

Gangrene of the lungs is to be distinguished from phthisis by these circumstances: it usually begins suddenly, and runs its course rapidly; the skin presents a more decidedly dusky hue in gangrene than in phthisis; and the breath and expectoration are always fetid from the commencement of gangrene. The prognosis of the two diseases is also very different. In gangrene, it is not necessarily unfavourable; from one-third to one-half of the cases recover; in phthisis, on the contrary, our prognosis is almost always unfavourable after a cavity is formed. When gangrene tends to a favourable termination, recovery generally takes place in a few weeks. Any improvement in the symptoms of phthisis, on the contrary, is very gradually and slowly effected.

There are two kinds of expectoration met with in gangrene of the lungs. The most common is blackish, and resembles an inky sediment. The other kind, of which we have an example in the present case, is a grayish, frothy fluid, having some resemblance to yeast, with a fetid odour, which you may perceive is like that of putrid oysters. This, though the least common, is the most favourable variety of sputa. It is generally discharged in very large quantities — amounting, sometimes, to a pint or a quart daily.

I have frequently described, in my lectures, the progress of cure in gangrene. When the sphacelated portion is thrown off, a cavity is formed, lined with the usual pus secreting false membrane, which gradually assumes the character of a mucous membrane. We shall watch the progress of this case, and keep you informed of the result.

The next case is one of bronchitis. The patient is a labourer, aged 35 years. He entered the hospital on the 2d instant, having been ill for two weeks. He was seized with cough, and pain along the sternum; in the course of a week, he began to expectorate a

muco-purulent matter, containing no blood; during the most of the time he has been confined to bed. These signs indicate an acute disease, which might be mistaken for the acute form of phthisis. It is distinguished from it, by the absence of the irritable, jerking pulse of phthisis, described in our last lecture, and also, by the absence of the local signs of tubercular deposition. Thus there is no flatness on percussion under the clavicles; and the mucous rhonchus is heard in the sound of respiration throughout the lower lobes of both lungs. But though bronchitis is thus distinguished from phthisis in the commencement, both by the general and local signs, yet it is very apt to terminate in the latter disease, and we ought always to anticipate such a result when it is prolonged, and occurs in young persons.

The next case is a complication of phthisis and bronchitis. The patient is a boatman, 38 years of age, of intemperate habits. He has been sick for three months, and unable to work during the whole of this time; his illness was caused by falling into the canal: the next day he was seized with shivering and cough, unaccompanied by pain: the expectoration consisted of mucus mixed with pus, but no blood. On the 4th instant he entered the hospital, and the symptoms were as follows:—There was abundant mucous rhonchus throughout both lungs, passing in certain portions into the sub-crepitant, while at the summit of the left lung, the percussion is dull and the respiration extremely bronchial. There is a quick, irritated pulse, some emaciation, and a dry, husky skin. The sputa, although not nummular, are more purulent than is usual in cases of bronchitis. The dyspnoea is much greater than in most cases of phthisis or uncomplicated bronchitis.

This case began in the form of bronchitis: phthisis was developed subsequently, and the two diseases are now co-existent. This state of things is of frequent occurrence, particularly at advanced periods of life. At an earlier age, when phthisis is developed in the course of a bronchitis, it is apt to commence more suddenly, and run its course more rapidly than in the present instance. The patient, you perceive, is but slightly emaciated, and will probably get comparatively well: that is, the disease may continue for years, with slight cough, &c., but may not shorten the patient's life; the cavity in the lung remaining, but lined with a healthy membrane. I have known several cases of such comparative recovery from this form of disease; and the chances of long life are not afterwards apparently affected by it.

I repeat that phthisis pulmonalis may commence in several different forms:

1. It may commence *slowly and gradually*. This is the most common mode of origin, and is generally met with in cases where the tubercular diathesis is hereditary. The first symptoms of the disease are slight cough and expectoration; the local physical signs are not present until a more advanced stage.

It is very clear that in most of these cases the phthisis is no-

thing but a mode in which the general tuberculous disorder manifests itself, and that the disease can scarcely be considered local, although the largest deposit of tubercles is in the lungs, or perhaps the only deposit. In many of them no antecedent cause can be detected, in others something has produced a debilitating effect upon the constitution, such as grief, indifferent diet, confinement, &c., and the natural tendency to phthisis is called into action, or a new disposition to it is developed.

2. Phthisis may arise from *inflammation*. This variety is most common in robust persons, and is likewise, in most instances, dependent upon hereditary predisposition, which imparts to inflammation a tendency to terminate in the formation of tubercles. The most common seat of the inflammation preceding phthisis, is some one or other of the serous membranes; and the tubercles may at first be deposited either in the serous membranes alone, in the lungs, or in both. The mucous membrane of the bronchial tubes may likewise be the seat of the inflammation; but phthisis beginning in the latter way, is more commonly met with in old persons, than that which begins by the serous membranes.

Inflammation performs two distinct parts; in the first it is properly the cause of the tuberculous deposition, which may occur some time after the inflammation, or take place during its progress. In the second, the secretion of tubercle is attended or followed by an acute inflammatory action in the organs, but the cause of the tubercles cannot be said to be the inflammation which attends their secretion.

These inflammations often present some peculiar features, even when there is no actual deposit of tubercles. Thus, a slow inflammation, with an abundant secretion of mucus, will often attack the mucous membrane of the nasal fossæ, or the upper portion of the bronchial tubes, and then pass into phthisis. These slow, obstinate inflammations, are strictly scrofulous, as much so as those of the large joints—coxalgia and white swelling; and yet they exercise only an indirect influence upon phthisis.

3. The *hemorrhagic* variety. In this, hemoptysis, whether preceded by a violent effort or not, constitutes the first symptom.

4. There is a fourth form, which is by no means uncommon in certain climates, and is met with occasionally wherever the disease shows itself. The patient suffers, at first, not from a disease of the lungs, or from any tuberculous disorder, but from dyspepsia, chronic disease of the liver, or some other affection of the abdominal viscera, either of an acute or chronic nature. During the course, or at the termination of these diseases, the tuberculous attack commences and develops itself in the lungs, because these organs are especially subject to tubercles from a peculiar law of the economy. In climates where the diseases of the abdominal viscera are very frequent, phthisis is thus obscure at first, because its symptoms are blended with those of the original disease. The same thing is true of dyspepsia, which often masks the early stages of phthisis, especially in those cases in which the patient does not labour under

simple dyspepsia, but under that variety which is connected with a scrofulous constitution.

But these different forms of phthisis, though differing so much in their origin, after a certain period present the same character; they are all attended by emaciation, cough, expectoration consisting of pus and softened tubercular matter, hectic fever, and all the other signs which mark the more advanced stage of the disease. The progress of phthisis is most rapid when produced by inflammation of the serous membranes, especially in young subjects; it is less so when preceded by bronchial inflammation. The hemorrhagic variety is likewise rapid in its course; the slowest of all is that which is constitutional and hereditary. All of these forms are liable to be confounded with other diseases; thus, the first may be mistaken for simple serous inflammation; the second for bronchitis; the third for hemorrhage arising from other causes.

We might multiply the varieties of phthisis almost to an indefinite number, but the preceding are the most important, and may be considered as the landmarks in the study of the disease; under one or other of these classes, all other forms may be included. There are likewise other tubercular affections, not commencing in the lungs, and only implicating them secondarily; but phthisis pulmonalis is by far the most frequent form in which the tubercular diathesis develops itself in adults.

I will conclude the lecture by showing you some very interesting pathological specimens, which illustrate this subject. They are the lungs and intestines of a subject who lately died of phthisis in its most aggravated form. I could only refer to the case at the last lecture; the patient, a young man, being then so feeble as to render it improper to bring him before you. The physical signs, during life, indicated the existence of a large cavity in the left lung: many of you have heard the cavernous, amorphic, and gurgling sounds of respiration, which were extremely distinct. In the course of his illness, the patient also had tubercular diarrhoea.

You will at once recognise the existence of a cavity in the upper lobe of the left lung, by the falling in of its parietes as I hold it up. This whole lobe, indeed, is converted into a mere sac, nothing of the normal structure remaining, except the pleura, and a thin layer of the tissue of the lungs on its inner face. The large size of this cavity accounts for the great distinctness of the amorphous respiration in the last stages of the disease. The cavity is lined by a false membrane, and contains a considerable quantity of muco-purulent fluid mixed with particles of tubercular matter. The muco-purulent matter is a secretion from the false membrane; and the contents of the cavity differ from the expectoration only, in not containing saliva, which is mixed with them afterwards. The sputa in this case were not of the nummular form, of which I showed you a specimen just now, for some days before the death of the patient, because the cavity was too large for their formation. You will notice several bands or bridles passing from one side of the cavity

to the other: these consist of blood-vessels, which have resisted the ulceration longer than the surrounding tissue: sometimes, however, they are opened by this process, and hemorrhage is the result, which is often instantly fatal. The rest of the left lung is infiltrated with grayish tubercular matter to such an extent, that scarcely a trace of the healthy tissue can be found. The tubercles are partly softened, and small cavities are seen here and there: these gave rise to the gurgling sound of respiration.

In the right lung, the lower lobe is in a comparatively healthy condition. The tissue of the upper lobe is engorged with blood; tubercular masses are scattered through every part of it; they are of a yellowish-white colour, and no signs of softening are yet perceptible.

In order that you may see the connection between the lesions and their physical signs, I will read some extracts from the notes of the case.—Nov. 4th. Respiration throughout right side expansive and full, but a little harsh. Left side, cavernous respiration with distinct pectoriloquy, most evident near the sternum, about the second rib.—Nov. 24th. Anteriorly, very loose gurgling, with cavernous respiration throughout the whole of the left side. Puerile respiration in the right side. Posteriorly, on the left side, very loose mucous rhonchus, with gurgling throughout; but there is a little vesicular murmur near the scapula. Respiration rude in upper third of right lung.—27th. Left side, anteriorly, respiration amphoric above; loose gurgling in the lower third. Posteriorly (same side), gurgling and cavernous respiration in the lower half, and at the summit; in the intermediate space, respiration distinctly cavernous, but mixed with a vesicular murmur.

I will now examine the intestinal canal. The mesenteric glands are enlarged, of an irregularly rounded shape, and are entirely converted into tubercular matter. This condition of things, when the tuberculous deposit is confined to the mesenteric glands and adjacent parts, constitutes the disease called *tabes mesenterica*. In most cases of this sort, there are likewise tubercles, either in the peritoneum, or the follicles of the intestine: here they are found in both situations.

*Large intestine.*—In the colon there are some ulcers in the follicles, with slight inflammation of the mucous coat. Near the rectum are innumerable ulcers of small size, which appear like so many distinct points, because they have commenced in the separate follicles.

*Small intestine.*—Near the ileo-cœcal valve are numerous ulcers, evidently commencing in the glands of Peyer. Some of these glands still remain, but much enlarged, and containing yellowish tubercular matter, which is still of a firm consistence. Here you may distinctly trace the changes which take place in the follicles, from the first deposition of the tubercular matter to its complete softening, and final discharge by ulceration. The other viscera were not examined, on account of the short time which remained

for us to make the examination previously to the lecture. There is no doubt, however, that tubercles existed in several other organs, particularly the bronchial glands and the spleen, which are amongst the most frequent seats of these deposits.

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## LECTURE XII.

*Phthisis pulmonalis. — Pathological characters of gangrene of the lungs.*

WE have another case of phthisis pulmonalis; some remarks may serve to give you some further knowledge of its history and diagnosis. The case before us is another example of the ordinary variety of phthisis, which commences gradually, and without any assignable cause. The patient is a printer, forty-seven years of age, formerly of intemperate habits, but since the commencement of the disease he has been perfectly temperate. Last winter a cough commenced, but so gradually that the patient is unable to fix the time of its first occurrence; during the last four months it has been much more severe and constant, and accompanied by hoarseness. There has been at no time spitting of blood; the expectoration was at first mucous, afterwards muco-purulent and somewhat nummular: this change in the character of the expectoration took place about the time that the hoarseness commenced. The left side of the chest is somewhat contracted; the respiration is cavernous, with distinct pectoriloquy. These signs shew the existence of a cavity, but it seems to be rather of an indolent nature. The hoarseness in this case is owing to inflammation attacking the larynx, and causing thickening of its lining membrane, and of the vocal cords; this inflammation often passes into ulceration; it is sometimes painful, but often there is scarcely a slight tickling felt at the part. I find on making pressure upon the larynx, that the patient complains of no pain, except just below the thyroid cartilage. This inflammation is the result of the irritation of the tubercular matter and other discharges which pass over the bronchial membrane, and it may take place at several different points of the respiratory passages — the larynx, the trachea, or the bronchi. This variety of inflammation is strictly secondary, and very different from that which occurs in the early stages of phthisis, in which the tracheal irritation is the cause developing tubercles, and not the result of their softening. There is generally considerable soreness attending the inflammation when the phthisis is acute; in more chronic cases it is slight, or altogether absent. This inflammation of the air-passages, in the cases of which I speak, is secondary; in others, as I have already repeatedly remarked, it may precede the development of phthisis. The other symptoms in the present case are of the usual kind; the

skin is dry and harsh; there is general emaciation, with roundness and prominence of the ends of the fingers; the pulse is quick, tense, and irritated; there are chills about the middle of the day, followed by fever in the afternoon, and cold sweats at night. The fever, therefore, has the regular paroxysmal character of hectic.

You have now seen cases of several varieties of phthisis, differing in their origin and progress; it is time to say something of the diagnosis of this affection. The diseases with which it is most liable to be confounded, are bronchitis, pneumonia, and pleurisy, whether of the acute or the chronic form; since phthisis, also, may be either acute or chronic. It may likewise be accompanied by any of these inflammations, and it becomes important to distinguish such cases from those of simple inflammation. The diagnosis of tubercular disease depends both on the general and the local signs. The first circumstance to be attended to, is the *general appearance* of the patient. The frame is emaciated; the skin is of a pale and earthy aspect; there is a restless expression of countenance, indicating the working of a slow disease, and entirely different from the alteration of the features which attends acute disorders. The emaciation shows itself very early in the hands and fingers,—the ends of the latter retaining their fulness for some time, and appearing rounded and prominent; the nails are likewise turned inwards. Emaciation is a sign of great importance in the diagnosis of phthisis and other tuberculous diseases; particularly if you find that the patient is losing flesh, although he eats nearly as much as in good health. When this sign is conjoined with others indicative of phthisis, the diagnosis becomes almost certain. The earthy hue of the skin is attended by a bluish tinge of the sclerotica, which very often occurs in phthisis.

We likewise observe a change in the *circulation*. There is a peculiar fever attending tubercular disease, and characterized by a quick, jerking pulse, the result of excessive irritation. This fever is accompanied by chills and sweating,—the former being at first very slight, while the latter is much more copious than in most other acute diseases. This peculiar condition of the pulse and sharp febrile excitement, are most important in the diagnosis of general tuberculous disease of an acute kind. It is, however, quite as well marked when the tubercles are rapidly developed in the lungs, as when they are deposited at the same time in several of the organs. The observation of these general signs should cause us to suspect the existence of phthisis, and lead us to the examination of the local signs. If, upon an inquiry into the latter, we are unable to ascertain the existence of any other disease, we are led, by a process of exclusion, to a confirmation of our original suspicions.

We also derive some important points of information from a consideration of the *predisposing causes* of the disease. Thus, the *sex* exercises some influence; phthisis is rather more frequent in females. *Age* is a more important circumstance: phthisis is most frequent in

young persons, and is rarely met with after the age of thirty-five. When it does occur after this period, it generally depends upon some accidental cause, as inflammation, &c. The *course of the disease* is another thing to be considered ; phthisis is in most cases slow in its progress : the diseases with which it is liable to be confounded are more generally acute.

The last and most important circumstance in the diagnosis of this disease, is an attention to the *local signs*. The first of these is usually an uneasy sensation in the chest, very different from the pain of inflammation. It varies greatly as to its position, sometimes shifting from one side to the other, or felt under the sternum. Pain, however, may be present in the commencement of phthisis, when it is complicated with intercurrent pleurisy. The cough is constant, but rather more severe at night, or early in the morning, than throughout the day ; it is at first short, and so insignificant as hardly to attract notice, and attended by mucous expectoration ; in the progress of the disease it becomes loose, and the expectoration is muco-purulent and nummular ; in a still more advanced stage, the cough is very loose,—the expectoration consists of pus mixed with softened tubercular matter, and loses its nummular character.

The *physical signs* are not obvious at the commencement. The first thing observed is generally a feebleness of respiration at the upper part of the lungs, which afterwards changes into rudeness ; this arises from the obstruction of the lung by the tuberculous deposit. We next perceive a crackling sound under the clavicle, indicative of the commencement of softening. There is likewise a dulness on percussion at the summit of the lung. In the advanced stages there is gurgling, with cavernous and amphoric respiration, and more or less perfect pectoriloquy.

There are certain *secondary symptoms* regularly occurring in phthisis. One of these is hectic fever ; at first the fever attending tuberculous disease is not hectic ; I have pointed out the difference in a previous lecture. When hectic is developed, it is recognised by the chills and sweating which accompany it ; the flush on the cheeks, &c. ; it is always paroxysmal. The loss of appetite, and decline of digestive power, do not depend upon the deposit of tubercles, but upon the fever which attends it ; they differ in no way from the same symptoms which ordinarily accompany febrile diseases. The diarrhoea of phthisis, however, often depends upon the formation of tubercles. It is intermittent, very irregular in its character, occurring sometimes frequently in the course of the disease, sometimes only once or twice. Its immediate cause, in most cases, is the development of tubercles in the glands of Peyer, which, consequently, become inflamed and ulcerated ; but diarrhoea in phthisis may arise from the same causes as in other diseases ; in the latter case, its symptoms and progress are entirely similar. Hemorrhage is another of the accidental or secondary symptoms of phthisis ; the blood is either discharged directly from the lungs by a slight cough, or it is swallowed, and afterwards ejected from the stomach. If the he-

morrhage be profuse, that is, not less than two or three ounces in a day, it is considered almost pathognomonic of phthisis, especially in males; in females, it is not so certain as a diagnostic sign, for hemorrhages from different parts of the body often arise from suppression of the menses, &c., and are, in fact, vicarious discharges; but in men, as I observed in the last lecture, in at least five cases out of six, abundant hemoptysis arises from tubercular disease of the lungs. The fact that hemoptysis is a very important sign of phthisis, has been long known, but Dr. Louis has rendered the profession a decided service, by proving that the value of the sign was even greater than had hitherto been believed. Many cases of this hemorrhagic variety of phthisis terminate in recovery; it is, in fact, the least unfavourable form of the disease, and therefore the value of the symptom is sometimes underrated, because in the minds of many physicians, the word phthisis and death are considered as almost inseparable. This form of the disease is probably less fatal than others, simply because the flow of blood relieves, to some extent, the vessels of the lungs, and appears to be a natural safety-valve, which diminishes the tendency to the tuberculous secretion.

The case of gangrene of the lungs which I showed you last week has since terminated fatally, and I will now present to you the results of the post mortem examination. You will recollect that I then stated that the disease affected the lower lobe of the right lung: it rapidly extended itself, and the patient sank in proportion. There is, in fact, no specific treatment by which the disease can be arrested; all that we can do is to support the system until nature accomplishes the cure, if such is her design. The pathological appearances of gangrene of the lungs are closely connected with, and explain, the symptoms during life, viz., fetor of the breath and expectoration, lividity of the countenance, and the physical signs of a cavity in the chest. This case occurred in consequence of the patient falling into the river: the gangrene probably commenced about two weeks afterwards, and had continued for several weeks previously to his entrance into the hospital: since that time it has been constantly advancing. If the progress of the disorganization could have been checked, it is probable that the case would have terminated favourably, for the mischief already done was not necessarily fatal. You will at once perceive the excessive fetor of the lung, and its dark green colour over the lower lobe. As I lift it up, the surface of the lung sinks towards the cavity, which occupies the greater part of the lower lobe of the left lung. The cavity rapidly increased in size during the last days of life, as was proved by the enormous quantity of matter expectorated, amounting to at least a pint in the course of the twenty-four hours. The immediate cause of death, however, was dyspnoea, arising from inflammation attacking the heart.

Pleurisy, in a greater or less degree, always attends gangrene of the lungs; here we have the proof of its existence, in the false membrane which covers the surface of the pleura. This inflammation of

the pleura, producing false membranes, and adhesions of the lung to the ribs, tends to prevent the perforation of the pleura, and the discharge of the gangrenous matter into the cavity of the chest. From the existence of amphoric respiration, perforation might have been suspected in the present instance, had we seen the patient only on the last day or two of life: but you now see that no such thing has occurred, and that the amphoric respiration was owing to the great size of the cavity. The lung is much softened around the cavity, and yields readily to the knife. The cavity is large enough to hold the fist: it is seated entirely in the lower lobe, having been first formed at its upper part: the disease very rarely attacks the upper lobe. By an examination of the walls of the cavity, we will be able to determine whether any process had commenced for the cure of the disease: when this does take place, it is by means of a false membrane which is formed around the cavity, and secretes pus and mucus, as is shown by the character of the sputa. But here we see no appearance of a false membrane, nor of pus or mucus: the cavity contains a gangrenous slough, and a quantity of the offensive matter which was so copiously expectorated during life. The walls are blackish, and gradually pass into the healthy lung. The existence of cavities formed in this way, is known by nearly the same physical signs as those which are observed in phthisis; but the fetor of the breath and expectoration is sufficient to distinguish the two diseases, independently of various other circumstances. The mucous membrane of the bronchi is inflamed in consequence of the passage of the gangrenous sputa over it: in some cases this matter is swallowed, and produces severe diarrhoea. The upper lobe of the left lung is healthy, with the exception of a few miliary tubercles scattered through its summit.

The right lung became inflamed in the progress of the case. The pleura is covered by a false membrane of the consistence of cellular tissue, which is very brightly injected. This inflammation was one of the causes of death. The substance of the lung is healthy, with the exception of a slight engorgement and induration in the centre, which probably constitute the first stage of gangrene, and a few tubercles in the upper lobe.

Upon examining the heart, we find traces of former pericarditis, in the patches of lymph on the surface of the pericardium, and the serous effusion into its cavity. The heart is of the natural size: its muscular structure is in the normal condition, and its lining membrane is also nearly natural, but not entirely so; there is a slight thickening in the left ventricle, and also of the semilunar valve of the aorta. The right side of the heart is frequently found perfectly healthy, though the left be greatly diseased: in this case we perceive merely a slight opacity of the internal membrane of the right ventricle. The valves of the pulmonary artery are quite healthy.

The spleen is enlarged and softened; this appears to depend upon the vitiation of the blood produced by gangrene, in the same way

with the livid hue of the skin. The liver is fatty, and of a lighter colour than natural. This fatty degeneration in males is frequently the consequence of intemperate habits: it is also very common in phthisis, more particularly that of females. In the progress of this alteration, the cellular tissue uniting the acini becomes more developed than natural, while the acini seem to disappear, their places being occupied by fat.

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## LECTURE XIII.

Phthisis pulmonalis (concluded). — Cases. — Treatment.

I WILL to-day conclude the subject of phthisis for the present course, by showing you one or two cases of the disease, and saying a few words in relation to its treatment. I shall occupy the remainder of the hour with some cases of cerebral and cardiac disease, and the results of a post mortem examination of an individual who recently died of phthisis complicated with serous inflammations of the heart and lungs.

I will first present to you a case of phthisis, commencing in a different mode from any of which I have yet spoken. The patient was attacked about two years since with *coxalgia*, from which he has never entirely recovered. The treatment consisted in the use of blisters and a seton; the discharge from the latter, after having continued for some time, was allowed to cease. About eight weeks after, he was seized with cough, which still continues, with other signs of phthisis; for a few days of the period which has elapsed since the commencement of the cough, there has also been hemoptysis. The phthisis in this case evidently commenced with a scrofulous disease of the hip-joint; for in two months after the discharge established for the cure of the coxalgia had ceased, the symptoms of phthisis began, and have since progressed in the regular order. The scrofulous diathesis, therefore, before affecting the lungs, developed itself *externally*. Cases of this sort are by no means rare; the external scrofulous disease may be seated in other parts than the hip; sometimes, for example, it occurs in the form of *fistula in ano*. An important practical question occurs in relation to such cases: Ought we to endeavour to cure the external disease? If we do, there is great danger that the irritation may be transferred to the lungs, and lead to the development of tubercles: on the contrary, if we suffer the disease to proceed unmolested, the constitutional irritation arising from it may destroy the patient, or give rise indirectly to the formation of tubercles in the lungs, by producing a condition of the system favourable to this

result. The proper course would seem to be, not to check the external disease too suddenly, but, if possible, to subdue it by degrees. Some time ago we had a case here, which illustrated the effects of an opposite plan of treatment. The patient was first attacked with tubercular meningitis; after recovering from that, he had fistula in ano; this was cured, phthisis consequently supervened, and the man died. These cases are extremely common, and you will see many such in your practice. The case now before us is also one in point. The arrest of these external discharges may likewise give rise to other diseases, among which are diseases of the heart, and inflammation of the lungs; the latter in such cases being often of a more chronic character than in ordinary pneumonia.

*Case 2.* We have here an example of phthisis occurring in old age; the patient is sixty-two years old. He has been employed in one of the oyster cellars of this city,—a situation, from its dampness, and also its darkness, extremely favourable to the development of phthisis. He has had cough for seven years, but it has never been severe till the commencement of the past summer. There is now well-marked cavernous respiration, with pectoriloquy, and other signs of cavity in the upper lobes of both lungs. Phthisis occurring at such an advanced age is extremely rare. But experience shows us that no age is exempt from this disease. Tubercles are found even in the foetus, and at every period of life. They are most frequently met with, however, about the fifth year, and afterwards from the fifteenth to the twenty-fifth. Cases of phthisis, or other tuberculous diseases, occurring in old persons, are much more frequently observed in hospitals than in private practice.

I next introduce these men, formerly patients, but now employed in the house, in whom cavities in the lungs have been more or less perfectly healed. The first is a case of phthisis, in which a cavity became cicatrised after it had continued to a very advanced stage, but was reproduced upon a second attack of the disease. The patient entered the hospital about three years since, with all the signs of a cavity in the right lung; dulness on percussion, cavernous respiration, &c., were very well marked. He remained in the wards for several months, during which time his condition was constantly improving: he was then discharged, and was, to all appearances, nearly well,—a small cavity, however, still remained, with slight cough and expectoration. After he had been out of the hospital about five months, he had an attack of intermittent fever, which continued for some weeks. After he recovered from the fever, he had a second attack of phthisis, or, as it were, a new crop of tubercles, for which he was under treatment in our wards. He is again much improved, though still feeble. The local signs indicate a partial consolidation of the lung by the process of cicatrification; thus, there is dulness on percussion, and a diminution of the natural vesicular respiration. These indications of a cicatrix

exist where formerly were heard a strong cavernous respiration, and all the other signs of a cavity of considerable size. The cure in this case, then, is only partial.

But in the case which I now present to you, there has been a complete restoration. The patient, in the year 1835, had an attack of gangrene of the lungs, which continued for several months, with very fetid expectoration, and all the other symptoms of this affection. The local signs indicated a cavity large enough to contain the fist. After a time the expectoration became muco-purulent, — a change which indicated an arrest of the gangrene, and the formation of a false membrane on the surface of the cavity. The man, as you see, is now stout, free from dyspnœa, and in every respect perfectly healthy. There was no scrofulous vice in the constitution, tending to reproduce the cavity, as happened in the preceding case. The disease was caused by cold and intemperance. As the man has now been well for nearly six years, the cure may be considered complete.

You see, therefore, that it is possible to cure a cavity in the lungs, however infrequent may be the occurrence of such a result, especially in phthisis, where new crops of tubercles are so liable to form. The treatment, in all such cases, is entirely negative; there is, in fact, *no remedy* for the lesion. All that we can do is to palliate the symptoms, and support the constitution of the patient till nature, if she be so disposed, accomplishes the cure. Generally, the prognosis after a cavity has been once formed, is altogether unfavourable; we always look for the death of the patient, whether the cavity be the result of a tubercular deposition, or of any other lesion. But before the cavity is formed, our chances of success are much greater. In hospitals, however, our prospects, in either case, are far less encouraging than in private practice. We are entirely unable to adopt those measures which are most essential to a successful issue; we can only employ medicinal remedies; in relation to food, clothing, air, exercise, &c., the means at our command are necessarily very limited and imperfect. In private practice, on the contrary, we are enabled more successfully, to combat the general disease, by changing, as far as possible, the whole constitution of our patients; for this purpose, we direct a change of scenes and of climate by travelling, which is our principal reliance in such cases.

In the treatment of phthisis, you will find that there is great practical importance in the classification of the disease into several varieties, which I have called your attention to in preceding lectures. The inflammatory variety may frequently be arrested in the earlier stages by the ordinary antiphlogistic means which we employ in cases of simple inflammation. In that variety which commences slowly and gradually, on the contrary, we derive little or no aid from this plan of treatment. The treatment of phthisis, therefore, must be as various as the different forms of the disease.

In the ordinary slow cases, we must attempt to change, as it were, the whole being and nature of our patient, in the same manner as we do with regard to the mental constitution in the treatment of insanity. By thus producing a change in the constitution, we endeavour to cause the expulsion of the tubercular vice. For the details, I must refer you to the different treatises which have been written on the disease.

It is unfortunate that the treatment of phthisis proper should be so limited, that is, as to the strictly curative treatment. If it be inflammatory, it is more immediately within the power of medicine, and a removal of the local inflammation, which is acting as a continual irritant upon the constitution, bringing about at last decided phthisis, is our first object, and then the patient will often pass little by little into perfect health, or he will remain in a feeble condition, which requires a change of air, a long voyage, or some other constitutional renovation, to remove the remains of the disorder. But if these patients be improperly treated, and suffered to remain suffering from chronic inflammation, or if they are exhausted by what is termed very vigorous treatment, they may readily pass into phthisis. This is especially the case as regards chronic pleurisy: a suitable antiphlogistic treatment is necessary, but an eye must always be kept to the state of the patient's general health, and the strongest efforts should be made to keep up the strength and aid the constitution in throwing off the disease, if already developing itself, or in acquiring that vigour which is opposed to tuberculous disease. In such cases a mercurial treatment is admissible, and I believe that the safest mode in many cases would be to mercurialize rapidly, as recommended by Drs. Graves and O'Bierne, were it not for the different susceptibility of patients to the action of mercury, which must render this mode of treatment at times injurious. It is better, therefore, on the whole, to give mercury in more minute doses, and to discontinue it as soon as a constitutional impression is made. It is impossible, however, to exercise too much caution as to the use of mercury in individuals attacked or threatened with phthisis, and from my experience in its use I would limit it to the very beginning of the disease, when associated with chronic pleurisy, or perhaps pneumonia: for there is a tuberculous inflammation of the lung which is slow to resolve itself.

As to the treatment of the disease, properly speaking, it is so well laid down in different treatises upon the subject, that I must restrict my remarks upon it to my lectures on the diseases of the chest, where the subject is necessarily enlarged upon.

## LECTURE XIV.

Pneumonia.—Jaundice.—Tubercular meningitis.—Pathology of laryngitis and laryngeal phthisis.

WE have lately had several patients convalescent from acute diseases, especially inflammatory affections of the lungs. I shall conclude the lecture with a few remarks on the tubercular affection of the membranes of the brain, so common among children, and with the demonstration of some pathological specimens illustrating the history of laryngitis.

*Case 1.*—In the two preceding lectures I spoke to you of a man labouring under an acute disease of the lungs, the severity of which rendered it improper to remove him from the ward. He is now before you in a state of convalescence. This man entered the hospital about a month since, at which time he presented the signs of pneumonia, complicated with an incipient tubercular affection—the latter impressing certain modifications upon the character of the former. Under the treatment which was adopted, the patient at first did very well; but suddenly grew much worse, in consequence of the supervention of pleurisy, followed by copious effusion. The distress produced by this complication added to that immediately consequent upon the proper affection of the lungs, and brought the patient to the brink of the grave. The dyspnoea and prostration of the system were extreme. In this condition of things, a mild, depletive plan was pursued; the great depression of the recuperative powers of the patient put all active measures of the kind out of the question. A single cup was, therefore, applied, and repeated according to the necessity of the case; at the same time the patient was put upon the use of mercury.

This treatment was soon followed by an improvement in the aspect of the case, which, however, was not very decided, until the action of the mercury was made manifest by the occurrence of slight ptysis. From that time, (seven or eight days since,) the patient has been steadily improving. But convalescence, in a case like the present, is never so rapid as it is in simple pneumonia. This is owing partly to the tubercular diathesis of the patient; in part, also, to the abundance of the pleuritic effusion, which always requires a certain time for its removal by absorption, more particularly when it co-exists with pneumonia or tubercles. The case is one of considerable interest, as illustrating the advantages of very moderate depletion, and of the judicious employment of mercury in certain forms of acute pulmonary disease. In relation to the latter remedy, I have repeatedly urged upon your attention, that we employ it in acute affections, not for the purpose of salivating our patients, but of producing its specific constitutional influence. Its effect upon the mouth is the mark of this influence, or of the satu-

ration of the system with mercury; after the slightest possible redness of the gums is produced, the influence of the remedy cannot be rendered more complete and decided, no matter how copiously it be given.

*Case 2.*—This is an instance of pneumonia so mild as hardly to require any treatment. The patient is a man aged forty-nine; he is of robust frame, and has led an active life, having been for some years a soldier in the Peninsula; he has generally enjoyed good health. He has lately been employed in cutting ice. On the 19th he was taken ill; the first sign of the disorder was a chill. This was followed by cough, but no pain in the chest; the expectoration has been viscid from the first, but has never been coloured with blood; at no time has the patient been confined to bed. On the 25th he entered the hospital,—and, on examining his chest, the physical signs of pneumonia were detected. The following pectoral mixture was ordered:—

R Ext. Hyoscyami, gr. viii.  
Syrup Polyg. Senegæ, 3j.  
Mucilag. Acaciæ, 3v.  
Ft. Mist.

*27th.* The hot infusion of eupatorium was ordered. Under the action of this remedy, the disease passed off by a copious dia-phoresis: the patient is still sweating. He may now be considered as convalescent. It would appear, therefore, that only eight days elapsed from the commencement to the crisis of the disease. This seems to be in contradiction to a rule which I laid down in a preceding lecture, viz., that the usual duration of pneumonia is from fourteen to twenty-one days. But it is to be remarked, that although the general signs indicate the decension of the disease, the local signs still exist; there are yet manifest some dulness on percussion, and crepitant rhonchus. By the time that these have disappeared, the case will probably be brought within the average which I have stated. This is the usual course of mild cases of pneumonia.

In cases like the present, no active treatment, and little, indeed, of any kind is requisite. Hot diaphoretic and nauseating drinks, are the best possible remedies. Such instances of mild attacks are less frequent in pneumonia than in most other diseases, and the expectant and palliative treatment just mentioned, is rarely worthy of confidence. But when such cases do occur, a more active treatment only puts the patient to inconvenience, without resulting in adequate benefit. I wish particularly to inculcate this principle, that, when a disease is tending to a favourable termination, all measures of an active kind should be dispensed with; it should be a matter of conscience with the physician not to harass the patient with unnecessary applications. An opposite course of practice tends, in no small degree, to throw discredit on the profession. This hurtful officiousness arises not from any defect or error in the

plan of instruction in our schools, but from an idea which is so apt to be entertained by every student from the commencement of his studies, viz., that every disease is recognised by certain signs, and requires for its cure a certain set of remedies. So that whenever the symptoms indicate the existence of inflammation, bleeding, purgation, and revulsion, at once suggest themselves to his mind. It requires experience to teach him that there are, in fact, many cases of inflammation, and still more of continued fevers, which require no such violent measures.

*Case 3.*—In this case we have pursued a plan of treatment precisely the reverse of that adopted in the preceding one. Very free bleeding and other depletory measures have been resorted to, but not with a corresponding amelioration of the symptoms, because they were not practiced until the disease had made considerable progress. The patient, Shepherd, was seized with pneumonia on the 8th inst.; he was admitted into the hospital on the 18th; so that ten days had elapsed before any attack upon the disease was made. The treatment was commenced by the abstraction of twenty ounces of blood from the arm; this was followed by cups to the side, which were repeated three times; the patient was also placed upon the use of the infus. eupatorii. Notwithstanding these active measures, the disease continued to advance, with very slight modification of the symptoms. The combination of opium, digitalis, and calomel, of which I have already so often spoken, was then ordered, mainly with the view of obtaining the antiphlogistic action of the mercury. Two days after his entrance, the patient was taken with singultus, which came on at particular periods in the day, and continued for an hour or two at each attack. Hiccough is a symptom of grave import in inflammatory affections, and is injurious in itself, inasmuch as it serves to exhaust the strength of the patient. It seems not to depend directly on the inflammation, but on a sympathetic irritation of the nerves of the diaphragm. It is a symptom which is more frequently met with in some seasons than in others; during the past year we have not had many instances of it. As it was not quieted by the treatment already adopted, assafœtida was ordered with this view; this failing, the oil of amber was ordered, in doses of six drops, repeated according to circumstances. Under this treatment, the singultus gradually subsided, and the disease took a favourable turn.

At the last lecture I remarked to you that the duration of this case would probably not be shortened by the active practice which had been pursued, and the result has verified the remark. Bleeding, however copious, will not cut short an inflammatory disease, unless practised soon after its invasion; a few hours may carry the affection beyond the point at which depletion may cause it to abort. After it has passed this point, bleeding, though it does not arrest the course of the disease, is still of use, by palliating its inconveniences, and diminishing its tendency to run into fatal disorganizations.

Little change was perceptible in the condition of the patient

until the 25th, when he was somewhat better. On the 26th he appeared to be in a state of convalescence. On the 27th this favourable change was still more evident. The face was pale and sunken; I have already stated that this subsidence of the features after the fulness and flushing produced by inflammatory excitement, is one of the best signs of convalescence. The pulse had fallen from ninety-six to eighty; it was soft and tremulous. The respiration had also fallen from thirty to twenty in the minute. No doubt therefore could exist as to the fact of the patient's convalescence; the simultaneous subsidence of the respiration and the pulse rendered it perfectly certain. On the contrary, if the pulse had become slower, while the respiration retained its frequency, we should have concluded that the patient was in a much worse condition.

The duration of this attack of pneumonia was nineteen days, which is within the average which I stated in my remarks upon Case 1. Pneumonia, in fact, has a natural duration, and one principal object to be aimed at in its treatment, after the disease is established, is to prevent accidental circumstances from interfering with the natural tendency of the disease to terminate at a certain period.

*Jaundice.*—The patient, aged 45, entered the hospital on the 23d inst. He had always enjoyed good health until last summer, when he had an attack of dysentery. On the 22d, after exposure to wet and cold, he was seized with cough, and the same evening he had a chill, attended with pain at the xiphoid cartilage. On the 23d he was jaundiced; the skin, conjunctiva, and urine, were of a deep yellow, and every object appeared to his sight to be of the same colour; the skin was moderately warm; there was no headache, but pain and tenderness in the right hypochondrium, which obliged the patient to lie on the left side; expectoration was slight; pulse moderately full. Venesection, cupping over the region of the liver, and a diaphoretic infusion, were ordered.

\*24th. Patient more jaundiced; pain had extended to epigastrium; slight signs of bronchitis observed. Cups repeated, and an infusion of senna, with sulphate of magnesia, ordered.

26th. Patient now complained of headache, and vertigo, depression of mind, &c. Bleeding repeated.

From this time the symptoms rapidly abated, and few remains of the disorder are now perceptible. The skin is only slightly coloured on the breast; the vision has become natural; the skin is moist; it has never been hot, however, at any time in the progress of the case.

The most prominent symptom of this case, besides the alteration in the colour of the skin, was the tenderness in the right hypochondriac and epigastric regions, accompanied by dulness on percussion. It was inferred from these signs that the liver was congested, and slightly inflamed. Inflammation of the liver is by no means a common occurrence in the winter season. The prevailing inflam-

matory diseases are those of the lungs, heart, and fibrous tissues of the extremities ; the abdominal viscera are more rarely affected. But this man's previous history affords a very sufficient reason for the occurrence of hepatitis in his case. Last summer he had an attack of dysentery ; now, a severe dysentery hardly ever passes through its course without involving the liver in a greater or less degree. There is, therefore, a strong presumption, that this man's liver was at that time affected ; it was naturally left in a condition favourable to the return of disease, upon the occurrence of the usual causes. This circumstance determined the deleterious impression of cold to the liver rather than to the lungs.

Jaundice depends on a great variety of causes. When acute, as in the present case, and dependent on congestion and slight inflammation of the liver, it is in general easily cured. It yielded in this case to bleeding, cupping over the liver, and saline purgatives. Mercury was not employed at all in the treatment : the only character in which it could have been used with propriety was that of an evacuant,— and in this case it seemed to offer no particular advantages over saline and other purgatives. You will recollect that in the numerous instances recently brought to your notice in which this article was employed, it was not as a purgative, but as an antiphlogistic remedy in certain stages of inflammatory affections.

Headache was an important symptom in this case, and its occurrence induced us to repeat the bleeding. In all cases of jaundice, indeed, cerebral symptoms demand particular attention ; for it is usually in consequence of the supervention of cerebral affections that this disease proves fatal. The cause of this complication is the suppression of the biliary secretion, the elements of which being retained in the blood, act like a poison upon the system, especially on the brain. In like manner, urea, if retained in the blood, proves deleterious. In fact, all diseases of the liver or kidneys, attended with suppression of their secretions, are followed by coma, and other signs of cerebral oppression, in consequence of which they terminate fatally. It is in this way that the granular affection of the kidneys, called " Bright's disease," often proves fatal. When the cerebral symptoms are active, the proper treatment is general and local bleeding, cold applications, &c. But it is impossible to remove them until the bile is eliminated from the blood ; this is effected slowly, and by a process of nature. If the symptoms are attended with much depression of the vital energies, depletion becomes improper, and we have to rely on other means, the most effectual of which experience proves to be sinapisms and blisters.

At the last lecture I introduced a man labouring under acute laryngitis, upon whom an operation was performed in your presence, but without success. This case was one of acute, grafted on chronic laryngitis. The affection was originally acute, (having commenced about a year ago,) but became chronic, and continued

so till ten days before the patient's entrance ; it then became acute, and the symptoms were strongly marked at the time of his entrance. It was likewise observed that the lungs were affected,—but in what way, the signs were too obscure to enable us precisely to determine. The lungs were pervious to the air, so that there was little dulness on percussion ; but the respiration was feeble throughout the right side, and some crepitus was distinguished below. It was hence inferred that the lung was congested, but nothing else could be made out with any certainty : as you will presently see, these signs were owing to the development of miliary, tubercular granulations, in great abundance, with congestion of the surrounding tissues. The operation of laryngotomy, performed by Dr. Gibson, produced some relief for the moment ; but the dyspnoea returned every time the artificial opening became obstructed, and not more than half an hour elapsed before the man died of suffocation. The operation was resorted to as the only chance of prolonging life ; but even if it had been more successful for the time, it could not, in the end, have saved the patient—for an immense number of grayish, semi-transparent, tubercular granulations, had filled the upper and a part of the lower lobe of the right lung, and the upper and a part of the lower lobe of the left. But, had the condition of the patient been such as to allow a full examination and positive diagnosis, the operation would still have been justifiable, as the only means of securing to the patient a few more hours or days of life.

The immediate cause of the intense dyspnoea under which the patient laboured, was oedema of the larynx, and inflammation of the trachea and bronchiæ. The former offered a very great obstacle to the passage of the air through the rima glottidis—while the trachea and bronchi were lined by a layer of very viscid mucus, which interposed a further obstacle to its entrance into the lungs. The matter lining the air-passages was not, properly speaking, a false membrane, but it was so dense that it could be detached in shreds of considerable length. There was likewise an ulceration of the lining membrane of the larynx, between the posterior extremities of the vocal cords, and extending to the cricoid cartilage.

This case is one of interest, inasmuch as it illustrates the connexion between laryngitis and phthisis. Laryngitis sometimes occurs as the primary, sometimes as the secondary disease. The latter was the case in a patient who lately died in the female wards ; during the progress of a tubercular affection, she was attacked with laryngitis, which was indicated by the ordinary symptoms, dyspnoea and aphonia. When laryngitis occurs as the original affection, it may continue for years, attended with more or less cough, hoarseness, and dyspnoea, but without any indications of disease in the pulmonary tissue. At last ulceration occurs ; at this point, in a very large proportion of cases, tubercles are developed in the lungs. In this variety of phthisis the tubercles are generally grayish, semi-

transparent granules, of small size, and uniformly diffused through the lung. Consequently, phthisis following laryngitis, is one of the most intractable varieties of the disease. In all cases where the affection of the larynx has advanced to ulceration, we apprehend the supervention of phthisis. Almost the only variety forming an exception to the rule, is that form of ulceration of cartilages and of the mucous membrane which occurs in secondary syphilis. But it is easy to discriminate such cases by the general condition of the patient, the history of the affection, &c. Besides ulceration of the larynx consequent on syphilis, almost always extends rapidly into the cartilages. The prognosis of laryngitis is never grave until ulceration has occurred: if there be merely thickening of the membrane, a cure may frequently be effected; but if ulceration takes place, this result can hardly be hoped for.

If the dyspnoea should be excessive, and threaten suffocation, an operation for its relief is the only resource. There are several different methods of performing such an operation. Dr. Gibson, in the case which we have been considering, preferred laryngotomy. This is usually done by making a transverse incision through the crico-thyroid membrane. In France, the operation for croup is often performed, and at the present day surgeons generally are in favour of tracheotomy. In this operation, a longitudinal incision is made into the trachea, which is kept open for the passage of air, either by means of a canula, or of a blunt hook applied to each edge of the incision. This operation is preferred to laryngotomy; inasmuch as it admits of a more extensive opening, through which the false membrane may be pulled away. You will find an excellent paper on this subject in a late number of the *Medical Examiner*.

I now show you the larynx and trachea of the man who died after the operation of laryngotomy was performed. The lining membrane of the larynx was at first highly injected; but by maceration in water, the blood has been almost entirely washed out. However, you can still perceive the œdematous state of the glottis. This œdema was produced by the effusion of serum under the mucous membrane, in the same manner that it is effused from the surface of inflamed serous membranes. The mucous membrane is softened: at the posterior part of the larynx is a large ulcer, and many smaller ones are scattered over the remaining portions of the larynx, as well as the upper part of the trachea. The mucous membrane of the trachea, like that of the larynx, was highly injected. The epiglottis is slightly thickened at its lower part. In the crico-thyroid membrane, you see the opening made by the operation; it is not quite so large, in fact, as the natural opening of the glottis; it therefore easily became obstructed by the viscid secretions which filled up the air-passages.

The upper lobe of the left lung, and all the lobes of the right one, contain an immense number of small, gray, semi-transparent granulations. In the right lung, they are so numerous as to have almost obliterated its vesicular structure. A tubercular deposition

of this kind never occurs, except in acute phthisis. The right lung is likewise congested, particularly at the lower part, over which the crepitant rhonchus was heard during life. At the summit of the lung is a cicatrized cavity, containing a mass of calcareous matter. The surrounding parenchyma is puckered and contracted by the cicatrix, and the adjacent pleura is covered by adhesions. These appearances indicate the former existence of tubercles; these were probably deposited at the same time the chronic laryngitis occurred, and were removed by the absorption of their animal matter, the calcareous portion remaining behind and constituting the white masses which you here see.

Here are the lungs of another patient, who entered the hospital in the last stage of phthisis, and died within forty-eight hours. I show them to you for the purpose of contrasting the early, with the latter stages of the affection. At the summit of one lung is a large cavity, and in that of the opposite one are numerous small granulations, of recent origin.

When the tubercular granulations are deposited in great numbers through the pulmonary tissue, the disease is almost always acute, and, in fact, is identical with what is often called the "galloping consumption." The termination of this variety, which is almost always fatal, occurs in two ways: in the one the patient dies of dyspnœa, and you find, as in the present case, the lungs excessively congested, through all that portion of them in which the granulations are deposited. The death then actually takes place by suffocation. I have seen some examples of it; one of the first was twelve years ago, when I was a resident pupil of this hospital. A black, who had been labouring under the disease for some time, with much dyspnœa, called to us one day while making the visit, that he was strangling, and died almost immediately; the lungs were excessively congested, and almost stuffed with these granulations.

In most cases, the disease passes on to softening at the summit, at least of the lungs, while the rest of the tissue is engorged and filled with the granulations. In these cases there is high fever, sweating, and generally intense dyspnœa. The cough, however, may be very slight. You will find the respiration generally feeble, and the chest less sonorous than usual.

There lately occurred a disease of the brain, which I am accidentally prevented from showing you, and which was interesting as an illustration of an affection of which I may perhaps speak more fully at a future time,—tubercular diseases of the membranes of the brain. The case was that of an adult. On opening the cranium, tubercular granulations were found beneath the membranes, both on the superior surface and base of the brain; in the intervals left by them, the membranes were injected, and covered with lymph. The affection probably followed the development of tubercles in the lungs; the examination was not extended to these organs. The deposition of tubercles under the membranes of the brain was followed by acute inflammation, which resulted in effusion, and softening of the cerebral

substance. This was indicated by rigidity and paralysis of the extremities; muttering delirium; subsultus tendinum; contraction, and afterwards dilatation of the pupils; distortion of the mouth. The occurrence of symptoms of meningitis in the course of tubercular phthisis, may be considered sufficiently certain evidence of the development of the affection of which I am speaking. In children it is indicated by the signs commonly described as belonging to acute hydrocephalus. This disease, so called, which is frequent from the age of two years up to puberty, is neither more nor less than tubercular meningitis; the inflammation is usually attended with effusion into the ventricles or on the surface of the brain, and from this circumstance the ordinary appellation of the disease is derived. But the effusion is altogether an accidental matter; and so is the softening which sometimes occurs. It is the tubercular deposit, and the concomitant inflammation, which constitute the essential characteristics.

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## LECTURE XV.

Typhus and typhoid fever.—Symptoms.—Treatment.

In the works of many writers on the continued fevers of Great Britain and Ireland, you will find that the only distinction admitted by them, as to the nature of these diseases, is that of the degree of severity of the symptoms. Thence the common division into typhus mitior and gravior; terms indicative only of the greater or less intensity of these disorders. In France no efficient attempt was made to trace the distinctive characters of the different affections classed under the name typhoid until the year 1806, when the work of Petit and Serres was published. These writers found that in the forms, such as they witnessed at Paris, there was a constant anatomical lesion seated in the abdomen and occupying the follicles of the ileum, especially the agglomerated patches, or, as they are often called, the glands of Peyer, seated near the ileo-cœcal valve, the mesenteric glands, and the spleen. These alterations were inflammatory, the affection of the glands of Peyer being attended with redness, thickening, and often passing into ulceration, while the mesenteric glands were enlarged, reddened, and softened, and the spleen was enlarged and softened. The evidence of inflammation was indeed perfect, except as regarded the spleen, of which the lesion might be regarded as dependent either upon inflammatory softening or as the result of an alteration of the fluids of the body.

The after investigations of Dr. Louis proved this matter much more conclusively. In his excellent work upon typhoid fever he has shown that the disease is uniform, and accompanied by a

regularly developed series of symptoms, not occurring in a confused manner, but forming together a well characterised whole. It was this uniformity which enabled him to designate the disease in such a manner that there is now no difficulty in separating the cases of it which are met with from those of the different affections classed under the vaguely used terms—typhus and typhoid fever.

In Great Britain, and still more frequently in Ireland, another disease, which is endemic in those countries, is called typhus fever, and resembles in many particulars the typhoid fever described by Dr. Louis. It differs from it in its symptoms, but especially in its mode of extension and in its anatomical characters. The latter are not fixed and regular; on the contrary, the organs are diseased in so many different degrees, that observation proves that there is no one uniform anatomical character, unless it be the condition of the blood, which is evidently altered in many cases, and probably so in others, in which the demonstrative proof is wanting. The lesion of the glands of Peyer is not met with in this disorder, unless it be in a straggling case of typhoid fever, classed among the cases of typhus; or in a complicated case, which is extremely rare, but I believe occasionally met with.

The deductions of Dr. Louis, as to the anatomical lesions of typhoid fever, have not therefore lost any of their value; they still remain true as applied to the disease described by him; but they are not applicable to the English typhus, or, as Dr. Graves calls it, the maculated fever. In order to prevent confusion in these terms, I have for some years past used the term typhoid fever, as applicable to the fever described by Petit and Serres, Louis, and even by Röderer and Wagler, and I restrict the term typhus to the disease described by the British writers, and not attended by the intestinal lesion. This distinction is gradually passing into common use in the United States. At one time I was disposed to adopt the term typhus mitior as applicable to typhoid fever, but I found that there were many cases and various epidemics of typhus fever in which the symptoms of the disease were extremely light and the mortality inconsiderable, but still the leading characters all remained, and the identity of the disorder was in nowise weakened. The terms mitior and gravior may, therefore, very properly be used to designate merely the degrees of severity of the affection, and not to distinguish two different forms of disease; the former is happily the more frequent form; the latter appears only in a few places, or in close confined ships and hospitals, where a number of men are crowded together.

The symptoms of typhoid fever are not all found in every case; that is, some one or more of those which are considered leading symptoms may be wanting, but the group of those which remain is in every case, or nearly so, quite large enough to identify the disorder. For convenience, you may divide them into distinct groups; first, those of the cerebral and nervous system; secondly, of the

skin; thirdly, of the abdominal viscera; and, lastly of the thoracic organs.

Those of the first series are, loss of strength and prostration, which occurs very early in this disease, singing in the ears, vertigo, and not unfrequently epistaxis. The pains in the head and limbs are not so violent as in the remittent or intermittent fevers. There is more frequently chilliness than a regularly defined chill. These are usually the earliest symptoms, followed after some days by slight diarrhoea and other abdominal disturbance. The brain symptoms increase slowly, the patient becomes dull and stupid; if the disease be violent, he may become comatose. Delirium is not invariable, although it is rarely quite wanting; but if the disease be mild, it shows itself only at night, and for a short time. In severe cases the delirium is violent, and if this be complicated with meningitis, the patient may fall into the wildest ravings; it is in general much more mild and low, or muttering. In fatal cases coma almost always precedes death.

In typhus we have a different succession of symptoms, and a difference in their development. From the very first attack of the disease the stupor is the most prominent symptom; sometimes the intelligence of the patient is in some degree preserved, although he seems to be in a dreamy, stupid condition, almost inattentive to surrounding objects, but still capable of answering correctly and continuously when his attention is excited. The recollection of the patient after the attack is extremely confused, and the stupor resembles in many respects a state of somnambulism. Besides the stupor, headache, dizziness, and tinnitus, are all amongst the early symptoms of typhus, but the strength is much less broken down than in typhoid fever. If the disease advances, the patient becomes comatose at a much earlier period than in typhoid fever, and generally dies if the case be fatal of the brain symptoms. Delirium is a very frequent symptom; indeed there are few cases in which it is totally absent; it is almost always of the still, muttering kind, except when complicated with inflammatory action of the brain. The cerebral symptoms of the two forms of fever differ less from each other than many other groups of symptoms, but there is, in the majority of cases, a greater difference in the character of the symptoms than is easily described; especially as regards the stupor, which is much deeper and more disproportioned to the other symptoms in typhus than in typhoid fever.

The external symptoms of the two diseases vary; you have seen that both are attended with an cutaneous exanthema, but in typhus this is general, extending over the whole body; in typhoid fever it is limited to the anterior part of the trunk, that is, the abdomen and thorax, rarely reaching as far as the thighs. The typhous eruption consists of a measles-like rash, slightly elevated, of a light red at first, but after the second day, or in severe and malignant cases, from the first, of a darker tint. The papulae are rounded and vary in size, from an almost imperceptible point to the breadth of nearly

a line. The rash is not, strictly speaking, petechial, that is, if the term petechiæ be confined to ecchymoses of blood in the derm, but it is frequently called by this term, and in the papers which I have published in 1837 the word is used in this sense. The rash gradually subsides after four or five days, but it is sometimes visible for ten, twelve, or even fourteen days. It appears usually about the third day of the fever. There is no other eruption which is peculiar to typhus; sudamina are, however, occasionally met with about the groins, and other parts where the skin is thin, especially during the hot weather. The measles-like eruption is evidently an exanthema, and very similar to the papular eruption of measles in its development and progress; and, from its constant occurrence, Dr. Graves calls the disease the maculated typhus.

The eruption of typhoid fever is papular, but the spots are rather larger, about a line in length, elliptical, more elevated, few in number, often not exceeding six or eight, and rarely more than thirty; they appear a little later than those of typhus, but last about the same time. The sudamina are much more frequent than those of typhous fever, and often appear in two different crops, one early in the disease, and another just before convalescence.

It is not yet settled whether any form of continued fever is met with which cannot be referred to one of these classes: I have myself seen none. But we must remember that some of the symptoms of typhus occur in many diseases in which the blood is more or less altered, such as phlebitis, asthenic pneumonia, &c., and thus may be confounded with these diseases, just as certain stages of remittent fever are often called by the same name, and regarded as mere varieties of typhus. But there is not in any of these cases the complete series of symptoms, although some isolated ones may be met with, in diseases which resemble in some respects these fevers, but are without the characteristic eruptions.

The symptoms connected with other organs vary in the two fevers. The abdominal symptoms of typhoid fever are, diarrœa, which is a frequent though not invariable symptom, flatulence with tympanitic distension, pains in the abdomen, sometimes at the epigastrium, at others in the iliac fossa. In typhus no one of these symptoms is found, except as a rare and accidental complication. The thirst and anorexia are common to the two diseases; but the former symptom is generally more marked in typhus, the latter in typhoid fever.

The thoracic symptoms are but moderate in mild cases of these fevers. In the typhoid the bronchial mucous membrane is congested, especially in the smaller tubes. The congestion produces a slight sibilant rhonchus, and may of course pass into bronchitis or pneumonia of a severe character. In typhus the lungs are also congested, but it is in a different way. The posterior part along the spine seems full of blood; causing at times a mucous rhonchus, but preventing in a great degree the air from passing into the smaller tubes. This condition of the lungs seems more dependent

upon the state of the blood than that of the mucous membrane, properly speaking, which is only secondarily involved.

The action of the heart is not violent in either disease; on the contrary it is often enfeebled, especially in typhus, in which the loss of power of the heart is one of the strongest indications for a stimulating practice. The pulse is more frequent in typhus than in typhoid fever. The capillary circulation is more or less altered in both diseases; hence the skin is dull and of a dusky tint, and at the face is often of a deep red colour, as if excessively congested, and the blood circulates slowly through the vessels, especially in typhus. The capillary vessels of the conjunctiva are injected in typhus, and full of blood, which circulates rather slowly through them; but in typhoid fever we have rather a bright eye than the dull, heavy, bloodshot one of the former disease. The medical physiognomy of the patient, which is mainly dependent upon the capillary circulation, is one of the best diagnostic signs of the two diseases, but it is very difficult to describe.

There are some other circumstances which are of interest in relation to this matter. One is, that typhus fever spares no age, is more severe amongst the aged and those in middle life than the young, and generally prevails as an epidemic, extending itself by contagion, or direct propagation, from an infected individual, or still more frequently from a mass of infected individuals, to others. Typhoid fever, on the other hand, rarely assumes this infectious character, and is rarely epidemic, probably it is scarcely infectious, except when prevailing epidemically. I never met with a case of the genuine typhus in this country before the year 1836, but typhoid fever is a common sporadic disease, especially in the northern parts of the United States. I have seen both varieties in newly-arrived passengers from emigrant ships, but rarely in the same ship. The typhus attacked a much larger number of patients than the typhoid, and was increased in severity in direct proportion to the number attacked. In some of these ships the disease was evidently propagated from one individual, who contrived to embark while labouring under the disease, and then those sleeping in the same berth with him were the first attacked. The origin of the fever was clearly transatlantic in all such cases, and in fact it was merely the Irish typhus, carried over to America by Irish emigrants, and sometimes propagating itself afterwards.

The treatment of mild cases of typhus is extremely simple: regarding it, as I do, as a self-limited disease, which necessarily tends to recovery unless arrested by some accident, I content myself with the simplest measures, acting as it were in the direction of the disorder, but not opposing any obstacle to the natural working of disease which tends to relieve itself.

At first I give the patient a dose of oil, which generally relieves his giddiness, and direct a mustard foot-bath at night, sometimes twice a day, and give him either simple lemonade, a neutral mixture, or what is still better the solution of the acetate of ammonia.

Should the face become flushed, a few cups may be applied to the nucha and behind the ears; but if the patient merely complain of great giddiness and deafness, without increase of the vascular action about the brain, dry cups are nearly as useful as the scarified. The oil may be repeated during the course of the disease if the patient be constipated. No other treatment is necessary during the mild form of the disorder; indeed this can scarcely be said to be necessary, it is useful, and diminishes the severity of the symptoms, and I am convinced, from long and careful observation of this disease, that the treatment cannot be made more active without injury to the patient.

At the close of the fever, however mild it may be, there is always an incomplete collapse; the patient may then take wine-whey and a more nutritious diet; but I agree fully with Dr. Graves, that in typhous fever, a regimen of almost starvation is rarely justifiable.

In more severe cases of the disease decided treatment is necessary; we must guard against the complications, the accidental symptoms, and support the strength of the patient when recovering. The lectures of Dr. Graves are full of important practical illustrations of these points, which I am not able to enlarge upon without going far beyond the limits of this lecture.

My object as to the treatment is to impress upon you the leading truth, that typhus is a real exanthematous disease, and has a natural course to run. No one should dream of interfering with this course when it is passing through its regular and ordinary stages.

The treatment of typhoid fever is not yet well settled. Like typhus it has a natural course, and about the same average duration (twenty to twenty-one days), but it is not yet certain whether the treatment should be, as in the mild cases of typhus, purely negative and defensive, or more active and aggressive. My own experience leans towards this view: I am strongly inclined to think that in mild cases the physician should interfere as little as possible, should restrict himself to laxatives, abstain from stimulants, resort from these to cups, either dry or scarified, to the nucha, now and then, but rarely, to blisters. Towards the close of the disease, a mild alterative, consisting of small doses of mercurials, such as calomel or blue pill with ipecacuanha, hastens the cleaning of the tongue, and favours the convalescence. Tonics and mild stimulants are at times necessary after the termination of slight cases.

The purgative treatment of typhus fever has attracted much notice of late years. I mean what may be termed the purely purgative treatment, consisting in the repeated administration of saline laxatives, so as to keep the bowels in a soluble state during the course of the disease. The results of the treatment are certainly extremely favourable, and it is very possible that it may be the best mode of treating the disease, which differs from typhus, not only in the general symptoms, but in the very different condition of the alimentary canal.

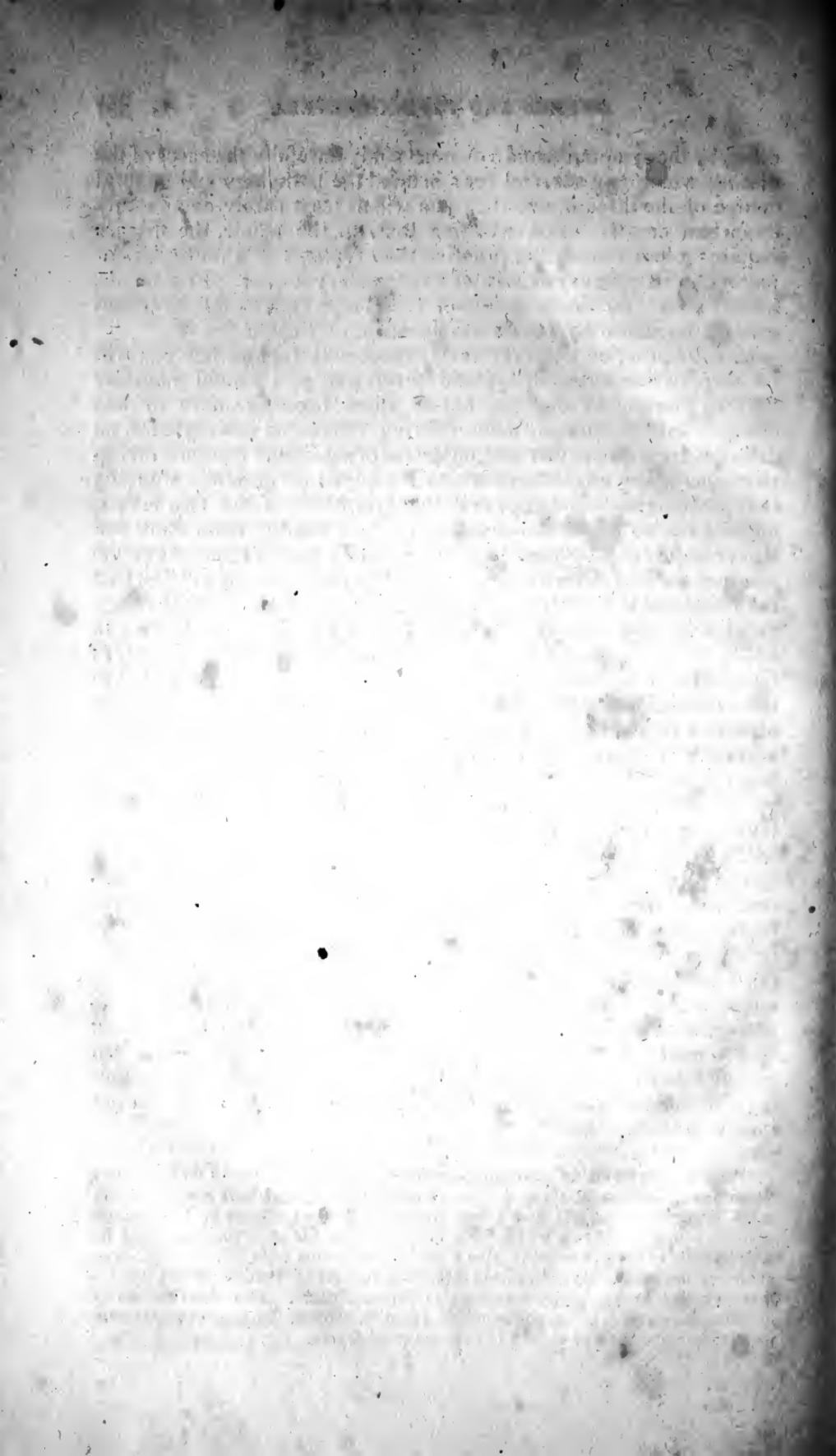
The treatment of severe cases of typhoid fever is necessarily mo-

dified by the symptoms, and you must study carefully the cases of the disease which you see, and bear in mind the pathology and general course of the disease, and then you will at least rarely commit any important errors. You will find that, on the whole, the disease requires a less stimulating practice than typhus; it is more inflammatory in its primary as well as its secondary lesions. For details, I must refer you to the work of Dr. Louis, and to the excellent memoir published by Dr. James Jackson, of Boston.

In your practice you may rarely meet with typhus, but you will be sure to see cases of typhoid fever, and you should consider the two diseases as distinct, but as allied together more or less closely;—each one of them offering numerous sub-varieties, as different from each other as a mild case of scarlatina is from a malignant one. The advantages which I enjoyed of carefully studying the pathological anatomy, and the symptoms of the two fevers, enabled me to place the question of their identity upon more settled scientific points than had yet been done; for by reference to the writings, both of British and continental physicians, you will find that the confusion is but lately dissipated. It is true that, after the observations which formed the basis of the paper which I published in 1837, were collected, but before their publication, Dr. Lombard, of Geneva, who was of course familiar with typhoid fever, stated in the Dublin Journal that the two diseases were different; the same remark I remember to have heard Professor Andral make on the authority of Dr. Alison; and it was obvious to many persons that the description of Dr. Louis did not apply to the British typhus, but the points of resemblance and of difference were not settled, that is, they were not scientifically demonstrated.

The views which I have given you are gradually receiving the sanction of physicians. How far experience may modify them I do not know; but it is probable that it will only add some new facts to those which we possess, without impairing their authority. The seeming discrepancy of previous statements may be perfectly reconciled with the facts, as is amply proved by Dr. Valleix, in the memoirs which he published on this subject in the *Archives de Médecine*, about the beginning of the year 1840. In the last edition of his work, Dr. Louis has taken up the same subject, and I am gratified to find that, far from retaining any doubts as to the pathology of these diseases, he fully admits that they are allied, but not identical.\*

\* The observations of British physicians confirm the views which I gave as to the pathology of these fevers. One of the latest writers goes over the same grounds as myself, and refers frequently to the memoirs of Dr. Valleix without citing the papers which were the subject of his analysis; nor does he ever allude to them, except to give a garbled quotation from Dr. Valleix,—an apology, the author says, for citing American instead of British writers upon a fever which was especially prevalent in Great Britain. The observations in question, however wanting in scientific fairness, confirm the general statements as to the symptoms and causes of the continued fevers.



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